

March - Volume 12, No 3

NDD

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Australian Commodore &

AMIGA

Review

For Professional and Home Users

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**Surfing
the Web**

**Deathbed
Vigil Video**

CanDo 3.0

**Lightwave
vs Real 3D**

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V-Lab motion NEW

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Full time line edit control with A/B roll type interfades and wipes. Also keying and "Blue Box" effects.

V-Lab Motion was "product of the year" in AMIGA PLUS (Germany) as well as a "Perfect 10" an AMIGA COMPUTING First.

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- \$ 869 for Toccata

"The V-Lab Motion system will blow your socks off!"

- Michael Ricks, Producer/Director
- SUNSTONE PICTURES, Phoenix, Arizona

SCALA NEW MM400

This latest upgrade to SCALA adds multi-platform support with the addition of the File format EX's, New text wipes, better anti-aliasing of text, X/Y font scaling and more. New EX's for the Neptune genlock are also included in this new upgrade.



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Features



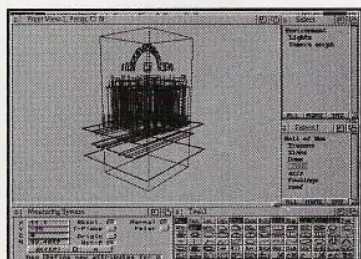
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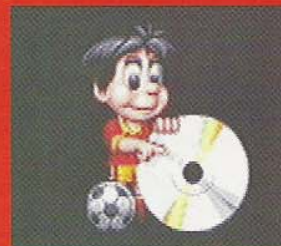
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Cover created by Jarrod Pudsey
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Render Time: 1 hr
Program: Lightwave
Machine: A4000/040/40MHz

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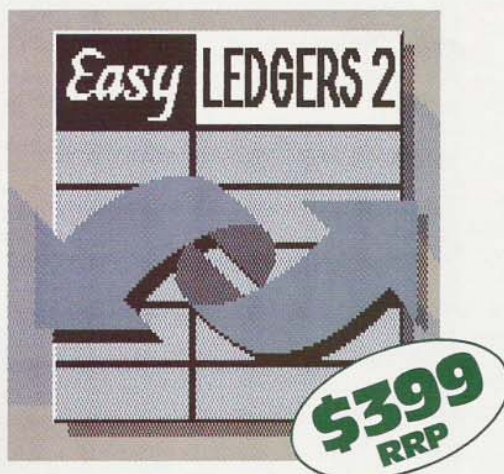
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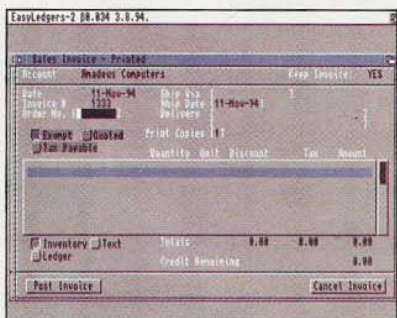
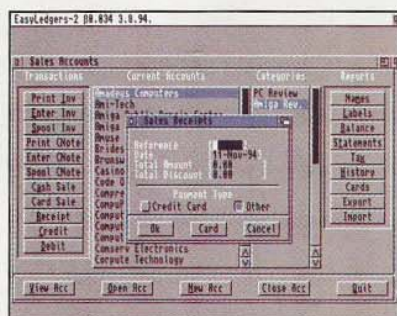
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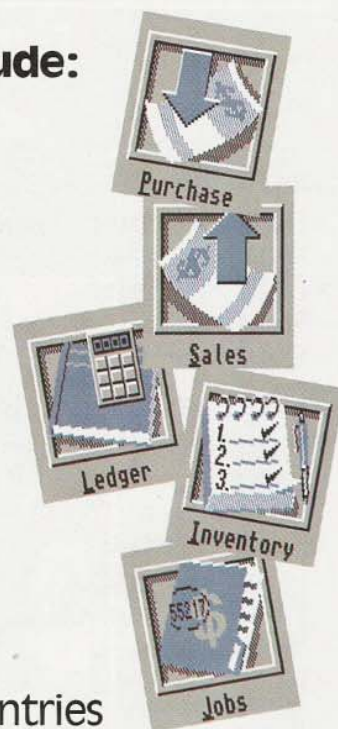
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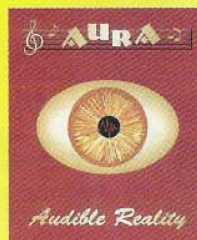
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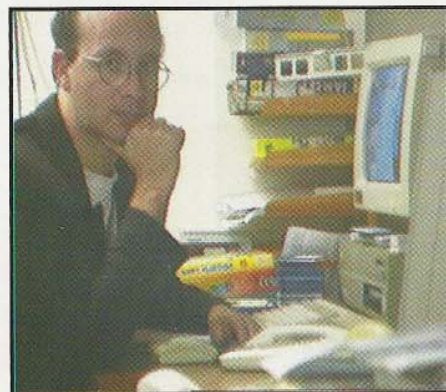
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E & O E



No, not the highway



► The information superhighway and the Internet are synonymous if you believe the hype churned out by the mainstream media. This is quite simply untrue. Although the Internet may well be a rudimentary foundation for some future superhighway, it is nothing of the sort today. There's lots of information, but getting at it is not fast or easy. It tends to be badly indexed, and often lacks real credibility when you finally get at it.

The multimedia content (mainly pictures) will reduce your machine to a crawl. The need for a much higher speed connection is very high indeed. Until the day we have ISDN links to our local service provider, the Internet will be no superhighway.

Exploring the net on your Amiga is no Sunday lunch. The software is tricky to set up and difficult to obtain. However, it is every bit as good as programs used for the same purpose on a PC, which are easy to set up because someone does it all for you before you get it!

This month, Daniel Rutter takes us on a surf around the net in a sort of teaser to our April issue which will detail how you can get on the net with ease. Right now, our own Internet expert, Wes Tatters, is producing a disk that will make connecting a doddle (a

technical word which means dead easy). You see, there are several programs involved which need to be configured just so - and Wes is creating a disk where all the necessary configuration has been carried out to make connection by local service provider Ausnet simple and painless.

In the meantime, peruse this month's pages on the World Wide Web, and prepare to join the masses who are Internetting into the next century. If you're already net surfing, check out the Aminet pages for version 3.0f of Pagestream. Yes folks, they went from d to f in less than a week. The e version turned out to be a dud! Let's hope the finished program arrives real soon now.

On the Commodore front, all is quiet. Despite rumours to the contrary, there have been no further major developments (although there were some rather amusing sideline carry-ons - check out Notepad for the lowdown).

We will keep you posted the moment there is some form of formal announcement. Commodore U.K. have set up a hot line containing, supposedly, up to date information. The number to call is 0011-44-628 779 655. When we last checked, the confident sounding recorded message had not changed in several weeks.



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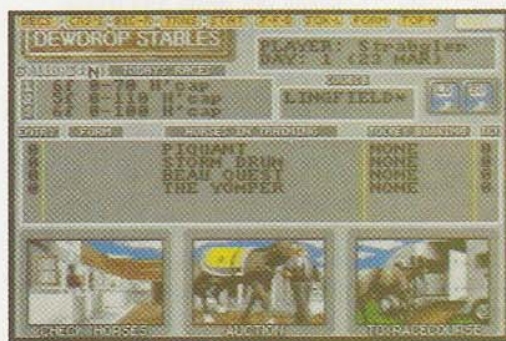


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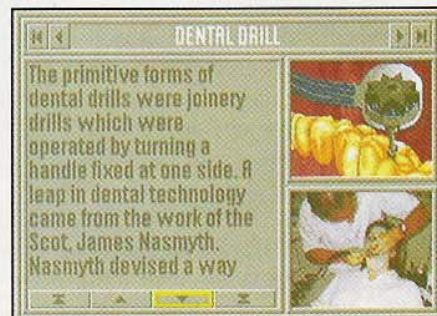
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Hot Buy-out News

According to articles by Dan Stets in the Philadelphia Inquirer, the final purchasers of the Amiga technology may still be shrouded in mystery but those widely claimed to be responsible for Commodore's downfall, ex-top executives Irving Gould and Mehdi Ali, are in hot water.

On the 6th of February, it was revealed that the liquidators fear that Gould and Ali "may try to block a legal agreement that cleared the way for the company's assets to be sold", and "it is unclear whether the sale could be finalised until the new controversy involving Gould and Ali is resolved."

A 13 page agreement (approved by a US bankruptcy judge and scheduled for a Bahamian Supreme Court hearing on the 9th of February) between the liquidators and the US creditors recommended going to the auction phase as soon as possible (yay!), and also said that

Commodore execs "could be held legally accountable for any actions they took 12 months prior to the liquidation filing in May 1994."

This means the liquidators could sue Gould, Ali or any other Commodore officer if they had any responsibility for the bankruptcy in the 12 months from May, 1993. No accusations have been made, but many ex-Commodore employees have gone on record as saying they believe Gould and Ali are largely responsible for Commodore's slide from massive profit to a huge loss.

This is interesting, because according to Bahamian law this liability period is only three months. US bankruptcy law allows the 12 month period, but it's plain that Gould and Ali are rather keen on only having the last three months of their tenure investigated.

An attorney for the liquidators said he "doubts whether Ali and Gould would have legal standing to file an objection to the agreement", because "under the terms of the agreement, the

liquidator will be allowed to use whichever provisions of U.S. or Bahamian law "are in the best interest of the estate". Gould and Ali's Bahamian attorney "has not filed a formal objection to the protocol and does not have plans to do so", although of course "he intends to appear before the Bahamian Supreme Court ... to make known his client's concerns".

Alex Amor, the head of the US bidder CEI, said "This is something that is going to benefit the creditors. It is not going to affect the sale of the assets."

The plot thickened in the February 10th Inquirer. There it emerged that "less than a week before beginning the liquidation of Commodore last May, the company's directors paid \$US2.6 million to extend their liability insurance for three years".

The liability insurance "shields their personal assets from negative legal judgments"; the "Chief beneficiaries ... are Irving Gould and Mehdi Ali".

This \$US2.6 million "came out of company assets, so it is money denied Commodore creditors and stockholders".

An unrelated, but interesting, development is that a couple more companies interested in acquiring Commodore have apparently popped up. "One of the potential bidders is Escom AG, the largest distributor and marketer of computers in Germany. ... Another individual, Louis Ulysses of Seattle, also appeared, saying he represented a major

American technology company, the name of which he declined to disclose."

Escom apparently offered \$US12 million for Commodore last September, and "is still interested, but would probably no longer be willing to pay that amount, because the sale has been delayed so long".

Stets' sources said CEI and Commodore UK's first bids were higher than Escom's, though they haven't made any bids public.

Unsurprisingly, Gould and Ali intend "to oppose the agreement which would allow the sale of Commodore's assets to proceed", and in a typical example of the jinxed way the Commodore debacle has unfolded, the hearing was put off for two weeks because "the judge scheduled to take the case went on emergency leave because of a death in the family." No connection has been made between this death and Irving Gould or Mehdi Ali.

Commodore UK Hotline

If you're itching to hear the latest from the UK bidders, they've set up a recorded-message hotline, on +(44) 628 779 655.

Amigas still popular

Even after all this brouhaha, a poll carried out by the UK Computer Trade Weekly said that 82% of shop managers wanted the Amiga back in stock. The demand's still there; if only somebody was making machines!

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DLG Buyout

TelePro Technologies, makers of the powerful Amiga-DOS-integrated BBS package DLG Professional, have been purchased by Automated Telephone Information Systems (ATIS), which was the biggest third party developer of DLG utilities.

ATIS have been working on funky voice recognition systems and other business automation software for IBM machines, but with the acquisition of DLG say they're signifying "a resurgence of interest in developing high quality, dependable and reliable software for the Amiga platform." We look forward to seeing what they do with the package. Current DLG owners will receive mail from ATIS about the takeover and future upgrade deals, BBS lists, developer info and the like.

Contact ATIS on +1-604-535-9352 for more information. □

3.1 for A1200 out!

It's now possible to get Workbench 3.1 for the A1200 - probably the biggest potential market for the upgrade, since 3.1 and a suitable CD-ROM drive like the Zappo can make a 1200 almost perfectly CD32 compatible. The package works the same way as 3.1 for other machines (reviewed last month); swap your ROMs, install the new software, away you go. As with the ECS machine version, there's a graphic speed increase, but we don't know exactly how much yet.

Contact Software Buyers Service on (03) 808 8308 for more information. □

Media Spottings

Cop show

Sam Johnson of Camberwell, Vic, spotted a kid playing the quite good arcade conversion Saint Dragon on an A500 on The Bill on the ABC. He then went on to say that he'd do anything for a free subscription, but "this isn't the usual Ritual Subscription Sucking Dance." Sure sounds like it to us.

The same spotting was also sent in by Tracey Harvey of Christie Downs, SA, but she said The Bill was a sitcom. Hey, perhaps SA gets the funny edit.

Eat Carpet

Anthony Pitt of Newnham, Tas, was watching Eat Carpet on SBS and saw some very good artwork of WWII planes, vintage radios and other art deco stuff; the credits at the end listed an A3000 using Deluxe Paint IV as being responsible.

Froot loop

Mike Faragher faxed us to say that "a close examination of Bart Simpson will reveal that he is in fact a modified A500" and continued in the same vein for a while. He then asked not for a sub but for a whole new Amiga. You know, we're probably going to meet this guy at some computer show. Hurrah.

3D Graphics

Lou Stillitano of Thornlie, WA, faxed us to mention an article in the WA Sunday

Times on the 22nd of January, which mentioned a company called Xenotech which is using an A1200 in the production of 3D animations to be displayed on a high tech eye-tracking 3D display unit.

He also noticed that the Robocop III auto-translating video phones speak in the mellifluous tones of the Amiga voice synthesiser. Big budget entertainment, eh?

Lou was convinced that these spottings were worth a free sub. His conviction was not justified, because of the next spotting.

Literature!

Barry Webster of Northcote, Vic, spotted an Amiga reference in a novel, no less. "Complicity", by Iain Banks, has the villain of the piece playing an imaginary game called Xerium on an Amiga. ISBN 0-349-10571-5, Page 136, start of the last paragraph, look it up for yourself.

Nobody's come up with such a literate sighting before; a free sub is yours, Barry!

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Datastore-

the friendly database

By Owen James

► One of two new database programs for the Amiga, Digita's Datastore offers a fresh approach to storing, retrieving and indexing information.

For the uninitiated, a database is in many ways similar to the old card file index system. Any information, from details of Uncle Herbert's bottle-top collection to a

large corporate mailing list, can be stored, sorted, retrieved, indexed and otherwise manipulated to produce all manner of reports or mailing labels. If one tool could be blamed for the explosion of direct marketing, the computerised database would be it. But databases aren't all bad.

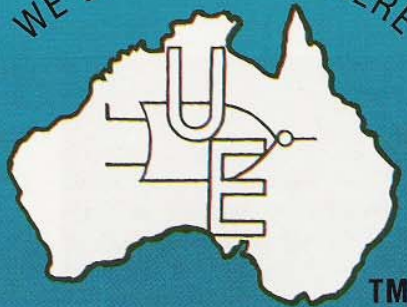
On the Amiga, we're blessed with the excellent Superbase Professional. Many programs have tried to compete, but most have fallen far short. Datastore, however, tries a different approach.

On starting Datastore, you could be forgiven for mistaking it for a desktop publishing package. Along with a large grid area you'll find a floating tool bar, rulers running up and down the screen, and a very colourful interface. For a user new to databases, this is the kind of interface you'd like to be presented with. It's big, it's bright, and it's cute.

The Datastore system is built entirely around its very friendly form designer. Designing the way you'd like information stored and compiled is as easy as designing a picture. Click anywhere on the grid with the field tool enabled, and you're ready to create a field definition. A box to hold record information will be placed immediately beside it, and will have vertical and horizontal sizing gadgets. No longer must you know in advance exactly how many characters you expect for each field; simply reshape the box to create additional space for your information as you



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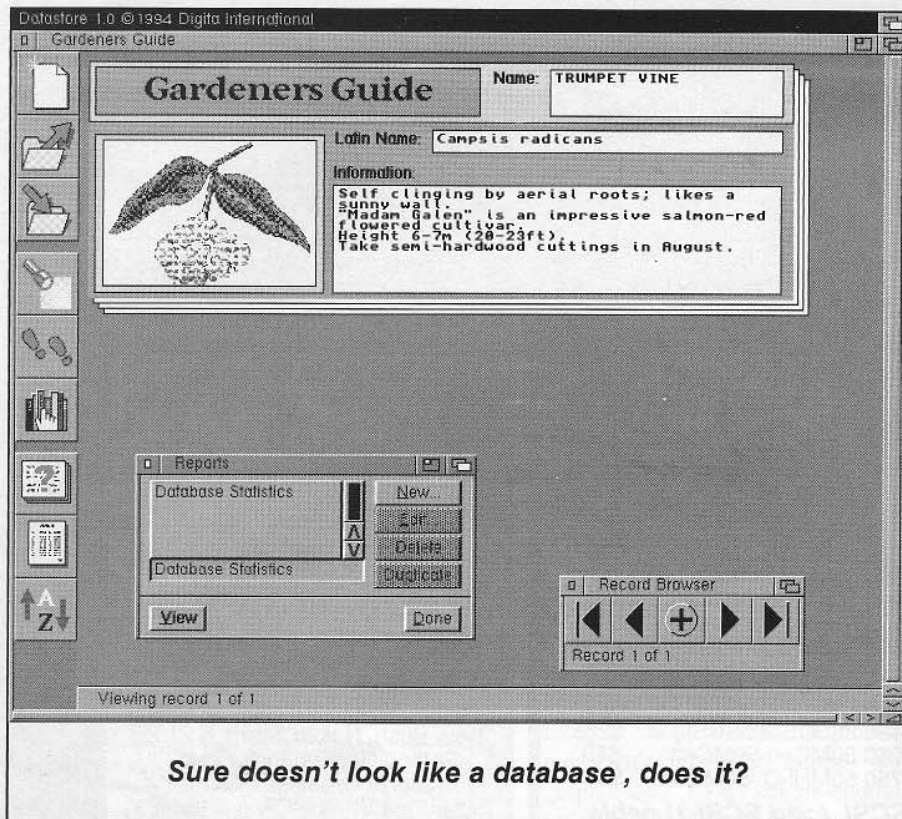
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go. Like to add graphic elements such as coloured boxes behind your text? How about a large heading at the top of your screen? Or your company logo? Easy. Point and click until your form looks like something even your boss could understand.

You can define graphics that remain static on every record (such as a company logo), and pictures which are defined for every record in the database (such as an individual's photograph to accompany each set of data).

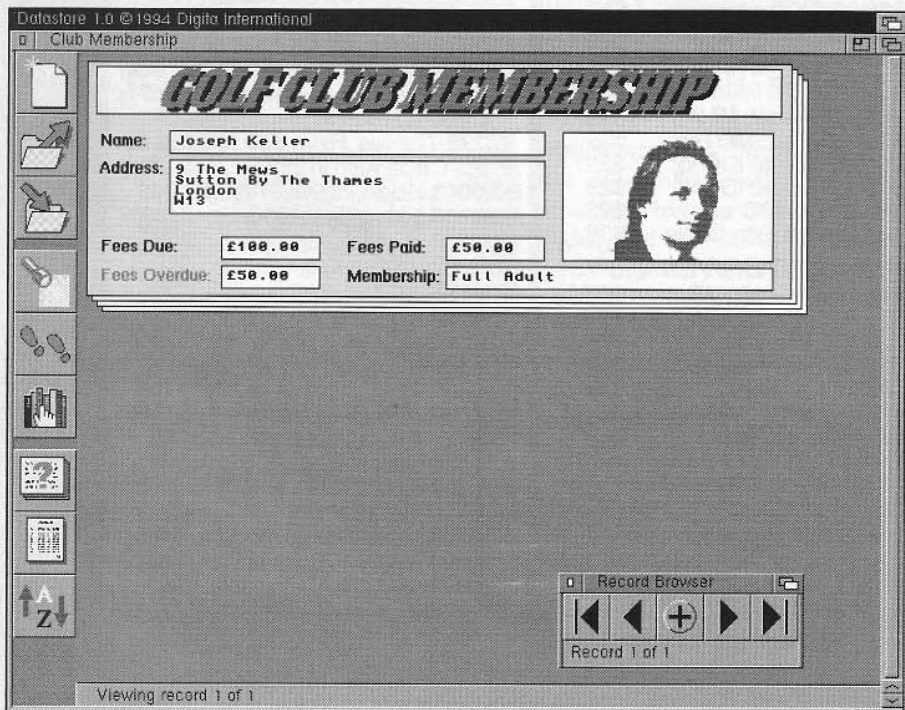
This all sounds fine and dandy, but the important question remains - How powerful is Datastore at handling data?

Behind the perky interface lies quite a solid database program. At first glance it would appear the reporting and query options are quite bare, and by default they are. However, it's up to the user to define the style of reports Datastore should produce. These can be saved along with the database, and selected for future reporting from a pick list.

You could ask Datastore to scan your data and tell you which members of your mailing list have a name beginning with the letter E and contain the number 8 somewhere in the postcode. That's the kind of precision you can specify. Setting up these types of conditions is not the exercise in mathematical hieroglyphics it always seemed to be with Superbase Professional. Rather, everything is entered using buttons and pick lists.

Sorting and query searching isn't blindingly fast, but Datastore isn't an exercise in tedium. Datastore can search more than one field at a time, and can do comparisons. For example, it could search for every customer in the 2001 postcode that has spent more than \$5,000 on your services.

Included is a time saving device called Librarian. This is a



pick-list of regularly inserted information. For example, if you're entering a mailing list which includes the date of processing (today's date) and the operator's name with every record, you could incorporate this repetitive data as a part of Librarian. Librarian's window remains open on the screen as you're entering records. As you get to the date and operator fields, just hit the mouse button over the pick list and the data is automatically inserted. This is a very big plus when entering large amounts of data. A pick list could contain all of the states of Australia, or often used product codes. It's fast and it's easy.

For users switching from another package, such as Superbase or Mailshot Plus, several import filters have been provided. Datastore can't read the data files directly; you must first use your old package to export the data as ASCII text. Datastore can also export records in ASCII format, for use with a word processor's mail merge for example.

Included in the package are a number of sample databases and templates. Most are nothing new; an address book, a club membership list, recipe index, and a database for Widget collectors. But obviously aiming to score points with British magazine reviewers, it also contains a reasonably comprehensive index of several UK Amiga magazines, complete with logo.

The manual is a fairly light 46 pages, but most aspects of the database are covered. It would be nice, however, if more technical information was provided. You don't get any details of what graphic file formats are supported, leaving this area a bit of a hit and miss affair. Some graphics I tried caused a crash, others wouldn't load at all.

Details of maximum numbers of fields and records per file would also be helpful. You don't want to hit a wall mid-way through entering a large amount of data. Overall, the manual earns points for be-

ing so user friendly - it's just a pity that it doesn't cater for more advanced users.

Datastore also incorporates an online help facility, based on AmigaGuide. It covers some common problems, but there's nothing here that can't be found in the manual.

Problems? Datastore has one major shortcoming - although it's a great program for maintaining a mailing list, it won't print to labels. There is plenty of control for compiling and printing subsets of your data, but very little formatting control. This is a major flaw that needs to be addressed in a future release. The only other problems I struck were a couple of crashes while importing pictures. Otherwise, Datastore seems a very stable release.

If you need to catalogue information, Datastore is probably the easiest and most user friendly way of doing it. There are more powerful packages out there, but they can't beat Datastore's simplicity.



Jargon Buster

Query - Whenever you ask a database to tell you something, you're querying it. It sounds more impressive than "search".

Pick list - A list of words or topics from which you can pick one. In Datastore, many data entry tasks are made faster by the use of pick lists of frequently accessed info.

Record - Each entry in a database is called a record. In a mailing list, each person on the list would have their own record.

Field - Every piece of data in a database resides in a field. In the abovementioned mailing list, the fields would most likely be first name, last name, street number, street name, suburb and so on. Every record has entries in one or more fields.

ASCII - American Standard Code for Information Interchange, the standard cross-platform text format. Databases use ASCII files for universal data exchange, traditionally by putting each record on its own line in a text file and separating the contents of the fields with commas.

Templates - A template, in the computer application sense, is a file with all the formatting gubbins of a full document or, in this case, database, but without the actual data. This means that if you can find a template that covers what you want to index, you can jump straight into entering your data, without having to build the form first.



Aura Interactor

By Daniel Rutter



► OK, I'll admit it. This sort of product is the reason why I do this job. Every now and then some gadget comes along that's off-the-wall enough to elicit a hearty "Oh, come ON!" the first time you hear about it, yet actually lives up to expectations.

I can't say it surprised me that this particular gizmo came up trumps, since it won the "Innovations '94 Design and Engineering Award" from the US Electronics Industry Association.

So what's the gadget? The Aura Interactor, that's what. It's a somewhat cyber-nerdy looking plastic oblong with straps that let you tie it onto your back - or, for a more visceral experience, your front. It's the size of half a skinny briefcase and contoured for some degree of comfort. You plug the backpack part into a funny looking amplifier box with a couple of dials and some switches, and the whole shebang runs off a power pack you plug into the wall.

Then you do the interesting part - you hook the Interactor up to a sound source and turn every dial you can find to 11. And every bass note from your game or music jug-

gles your innards around as if you were sitting in a lowriding boom car - only without the shag pile, fluffy dice and police attention. A heavy-duty electromagnetic actuator in the backpack is what does the jiggling.

Thus do computer games become rather more involving, as every boom, thwack and rumble relocates your kidneys in no uncertain terms. The computer game setting puts a honking extra bass boost on the incoming sound for maximum pump; there's also a less ferocious music mode for use with your stereo. It's excellent fun.

Now, you can get this effect from a conventional stereo system of prodigious proportions - it's actually even better, because your whole body gets shaken at once, instead of having the locus of vibration locked in the small of your back - but in order to do it you'll need to spend many thousands of dollars on the stereo, and a lot more on a house five miles from any centres of population. And then there's the eardrum transplant you'll need after a while, which at present is beyond the capabilities of modern medicine.

The Interactor costs \$149. You really can't beat that, particularly when you consider that a top-rank game for any recent console can set you back more.

Problems

This doesn't mean the Interactor's perfect, though. The most annoying thing about it is hooking it up, especially to an Amiga. The Interactor comes with a cross-shaped adaptor thing that lets you connect it via its standard 1/8 inch stereo phone plug cable to a Super Nintendo, Sega Megadrive or Megadrive 2, but to hook it up to the Amiga you'll need a separate amplifier. You can't run a twin-RCA to 1/8 inch cable to the Interactor because the Amiga outputs line level audio, which is too low for the Interactor.

There's no passthrough socket on the Interactor's amplifier, which doesn't really matter for Amiga users because we'll all have to use it from a headphone socket on something else anyway. CD32 users will be laughing, since they've got a handy socket right there on the console.

It could be annoying for many



others, though, because most cheaper stereos and just about all TVs mute their speakers when you plug something into the headphone socket. There's no way round this problem save cutting the wire from the "phones in" switch. A technician can do this for you, or you can do it yourself if you're confident (Warranty voided, we take no responsibility, on your own head be it). Alternatively, you could buy a Proper Stereo with a separate speaker switch.

What's inside?

There are stern warnings all over the Interactor and all though its manual not to open the device, so I did so immediately. Inside the vest lives the actual actuator, a gold anodised circle with a winding on the outside and the magnet-equipped vibrating Lump O' Metal on the inside.

This is the reverse of the usual speaker arrangement, which has the coil attached to the back of the cone and surrounded by a huge magnet. The suspension for the central lump of the actuator is not, as is the case in speakers, made of rubber or cloth. It is made of fibreglass. This impressed me.

On plugging the nude actuator into the power amp (don't try this at home, and all that), the thing that struck me most is that it gets rather warm rather quickly. Play pumping bass at full power through the Interactor for about five minutes and the actuator will be almost too hot to hold.

This means that when the manual says you shouldn't block the ventilation slits by leaning back into a chair, it's not kidding. You do get a bit more thump from doing this, but an actuator meltdown could spoil your whole day.

Overall

Does the Interactor actually make you any better at a game? Nope. If anything, it distracts you. But the idea here is fun, and the Interactor certainly is that. Whether pumping up a punch-up, turning a flight sim into Top Gun or making your favourite music and movies into life changing experiences, the Interactor is \$149 very well spent.

*For more information, contact
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MCIBTYC

I have just read your reply to Lu Baranek regarding PC Comparisons in the June issue of Amiga Review. I was once an enthusiastic Amiga user who, after a few years, changed over to an IBM compatible. I did this for two reasons.

1) The vast array of programs and games available for PCs.

2) The added features and extra speed of the PC.

These are the facts, as I compared program speed and features before changing, which renders the ongoing argument about which machine is better irrelevant, as it is what you want to do that makes the difference, not the hardware itself.

Therefore, it was the programs and not the machine that influenced me to change - as you point out, there are some very powerful ones on the IBM.

In your reply to this letter you point out that you "do a PC magazine too"; so I must ask the question - where do your loyalties

really lie? Is your magazine produced using an Amiga, IBM or Mac? How can you maintain your allegiance to one if you support others?

**Philip Weeding,
Numurkah Vic**

Ed: In case our readers are wondering what the title we put on this letter means, it stands for My Computer Is Better Than Your Computer, an evergreen yet pointless topic which tends to crop up whenever users of different models of computer gather.

Storm Front Studios does indeed produce both PC Review and Amiga Review. We have a multinational office, with PCs and Amigas working side by side.

There certainly are more programs for IBM compatibles, a powerful argument in their favour and both a reason for and a result of their prodigious market penetration. But we're not so sure about your assertion that PCs have more features and speed, per se. More features and speed per dollar, yes; to get a screaming 68060 driven Amiga with a super-fast graphics board and 16 bit stereo sound will cost you considerably more than a numerically similar Pentium machine, but there are compensations.

The Amiga is in many ways like a cross between an IBM compatible and a Macintosh; it's got some of the Mac's plug and play design (PCs are going that way but not very fast) so you can just plug things in and, generally speaking, have them work without any mucking about with IRQs and interrupts and ports and drivers and all the rest of the IBM-compatible rigmarole.

But the Amiga also has some of the PC's "hackability"; it's got a command line interface as well as its graphical one, its basic hardware is well standardised, it has a

plethora of interesting PD and shareware software.

We completely agree with you when you say it's getting a machine that does what you want that's the important thing. We use PCs here to do contact management, for example, because the Amiga has no contact management software that comes within a hundred miles of ACT! or Tracker.

On the other hand, we use Amigas to do all the desktop publishing for both magazines because the PC, quite simply, still doesn't have anything as efficient for what we want to do as Professional Page 4.1 running on AmigaDOS 2.1 - PageMaker's got lots more features than Pro Page but it's just not fast enough. If we get some monster Pentiums running Windows 95 or suchlike, though, we might switch.

As to our "loyalties"; we don't have any! A car magazine doesn't have an "allegiance" to any given manufacturer; why should we? Computers are tools. If you want to drive a nail, find yourself a hammer. Who cares who made it, if it works?

Swap Meet announcement

Due to the overwhelming success of last year's Computer Swap Meet, the North East Computer Club (Amiga and IBM) is planning to hold another Swap Meet on Sunday, March the 5th from 12:30 to 5:00PM. The Meet will be held at Purbrick Hall (corner of Ford and Ovens St, Wangaratta, VIC 3677).

The purpose of the Swap Meet is to make the general public aware of the various computer clubs that are available to them in the North-East of Victoria, as well as providing an opportunity for individuals and clubs alike to sell/swap and promote their merchandise and services. There will also be a food and drink stall.

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Antique ACAR

On a recent visit to my doctor I found a copy of ACAR in his waiting room dated October 1989, and of course I had to nick it (with his permission). I thought I would share with you and your readers the mixture of feelings I experienced in reading it. In your editorial you sing the praises of the coming ECS; and what about this for a poignant statement "The leading brand in personal computers for the home is Commodore, with more than four times the share of its nearest competition."

Just to cheer us all up, may I quote from some of the ads and the

prices for hardware that were being asked just five years ago? Under the heading BARGAINS GALORE: 40MB SCSI A2000 HD \$1499.00, 30MBA500/1000 HD \$999.00, or how about "new A500 with starter kit, Kindwords, Fusion Paint and 3 games for \$899.00"; what about a brand new A2000 for just \$2499.00? The saddest part of reading the magazine was to note how many advertisers no longer exist. Commenting on any of the above would be an exercise in futility. Nonetheless, I hope you find it as amusing as I did.

Kind regards and please keep up the good work. I find absolutely nothing to complain about in ACAR's current format.

George Gualerzi,
Hurstville NSW

Commodore confusion

I've been hearing rumours lately that Commodore UK has finally bought the Amiga technology - are they, finally, true?! I've been waiting to hear the good news for almost a year now, and the taunting from my IBM-owning friends is starting to get to me!

Mick Gazauwi,
Marrickville NSW

Ed: By the time you read this, it might have been announced that Commodore UK has the Amiga - or it might not. Check out Notepad this month for the latest solid news!

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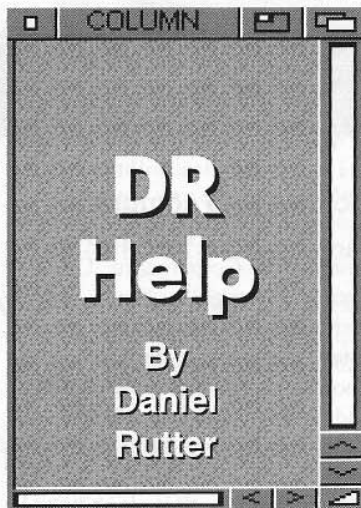
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4000 Expansion

Dear Helpline: I have a 6Mb A4000/LC040 with the stock 120Mb hard drive, DPaint 4 AGA, Scala, TV Text Pro, Deluxe Video III and Real 3D. I want to do 3D animation, but I have no maths co-processor, and probably not enough storage either.

I've got about \$3000 to spend, and I want to create 3D logos that would run for no more than 15 seconds. What do I need?

Peter Staines,

Glen Waverley Vic

Dr Help: Your emasculated late-model 4000 is still a quite quick machine; you will get noticeably better performance with a full 040 board (less than \$1000 for one of the slow Commodore ones, considerably more for a much faster third party model), but it's still no slouch. If it's fast enough for you, live with it.

You definitely will need more storage. A one gigabyte hard drive will set you back around \$1000 and give you tons of room; you can get an IDE model to run off your current controller or buy a SCSI controller, which will allow you to plug more gear in later. More RAM is also a good idea - 10Mb will put you on a better footing for rendering work.

To archive your animations, consider buying a removable hard drive - a cheap Syquest 44Mb will

suit your needs but might not be very reliable; a new Syquest 200 or 270 gives the most megabytes per dollar but a Bernoulli or magneto-optical is tougher. Check out the Amiga Review comparison of these last two in the January 1995 issue.

If you're going to put your animations onto video, you'll need a genlock, and there are a lot of those available.

You can make do with HAM8 for your animations, or for slightly better looks and considerably better speed go for a 24 bit video card; again, there are plenty to choose from.

The precise choice of gear is up to you; it's not this column's place to do equipment reviews. Shop around!

3000 RAM

Dear Helpline, I have an Amiga 3000 with 14Mb of static column RAM (2Mb chip, 12 Mb fast). I dabble a bit in graphics and 3D rendering with Imagine and find my current setup inadequate. Using models of an average size of about 300Kb, with brush maps, background pictures and global brushes I find that to render a decent sized image, 1024 x 768 pixels, I run very short of memory.

To render larger or more complex images I need more memory, but my problem is that static column RAM is non-existent, and any other solutions are quite expensive. The Fastlane Z3 costs the same as 16Mb of SIMMs and I'd rather spend a grand on memory rather than a board to plug it into.

I could go all out for a Warp Engine accelerator, but would still have to shell out for the RAM. Is there a high capacity memory solution that allows all my memory to be seen as a contiguous block, or should I sell my current memory

and go for an accelerator with its own memory?

Tim Polmear

Dr Help: Static column ZIPs are indeed very hard to find - and you could only get another 4Mb worth of them, anyway. There's no cheap solution, I'm afraid; the only cheap memory boards are 16 bit.

You could try using virtual memory, though. Your 3000 has a memory management unit, so programs like Gigamem will work, and give you plenty of extra pseudo-RAM. It's slow, of course, but it'll work.

Database moving

Dear Helpline, I have just bought an IBM clone but after five years of being an avid Amiga user I have built up quite a collection of data on my old A2000. I want to transfer data from Softwood Filer on the Amiga to the database in Works on the clone.

I'm running Windows for Workgroups on the clone which has a program called Remote Access, and Works also has a communications program. On the Amiga I have JRComm V1.02a. I also have a three wire null modem cable. How would I go about doing it?

Darren Healey

Dr Help: Output the data you want to transfer from Filer in comma-delimited ASCII format. Hook up the two machines with the null modem cable (you may need an adaptor for the IBM end, as they usually have 9 pin serial ports). Run the comms programs on both machines.

Make sure the IBM one's talking to the right port, and make sure they're using the same baud rate (if your 2000's not accelerated, 19200's likely the fastest it can

manage) and other data settings (the default settings, eight data bits, one stop bit, no parity, should be fine).

Now transfer the files, preferably with ZModem, which auto-starts and doesn't require you to tell it the filename on the receiving machine. If you have to use XModem, do - but remember that plain XModem and XModem-CRC are incompatible!

Now import the data into your IBM database. Remember that the standard end-of-line identifier for Amiga text files is control-J (^J), not the IBM ^M^J; you'll probably have to tell the database that. If it barfs, try converting the end-of-line format to the IBM standard - there are several PD utilities for this on the Amiga, and any decent text editor will let you do it by hand.

Simple, huh?

Lost library

Dear Helpline, I have A1200 and am having problems trying to load CG fonts onto Pagesetter 3. I was interested in your article on fonts in the Nov/Dec issue. However, when I followed your instructions was told: - OBJECT NOT FOUND!

When I type:

copy df1:libs/diskfont.library libs:

I get

Can't open libs/diskfont.library for input - object not found.

What am I doing wrong?

Ron Muller

Dr Help: You're using a later version of Workbench! Workbench 2.x

needs the right version of diskfont.library, which may or may not be installed to start with but is definitely needed - and is located in the libs directory of the fonts disk. Your 1200, however, should have the right library to run Intellifont already.

Printer Paralysis

Dear Helpline, I can't print faxes from GPFax any more, although the GPFax driver is chosen in the prefs and the fax can be viewed as usual.

The requester says to check cables and so on, but that doesn't seem to be the problem. Funnily enough, I can print out the faxes if I change them to IFF and import them into Pagestream. Deluxe Paint will not print either. I've tried many prefs settings with no success.

An Amiga Review answer in the Nov/Dec 94 issue mentions that it's possible to blow your parallel port without noticing - maybe something like that has happened. I have an A2000HD. I would be grateful for any suggestions. Thanks for a much improved magazine. Thanks also for hanging on through all the 1994 ownership problems.

**Nina O'Flynn,
Bateau Bay NSW**

Dr Help: Good news! You haven't fried anything! If you'd cooked anything related to the parallel port, nothing would be able to print at all. The GPFAX.DRIVER is used by GPFax itself, and shouldn't be selected manually in Preferences.

When you select "Printer Driver" in the GPFax options, GPFax wedges itself into the printing system so that anything that tries to print to the standard Prefer-

ences driver instead sends its output to GPFax. It does this by remembering what you had your printer driver set to before, and changing it to GPFAX.DRIVER. When you quit GPFax or turn off the Printer Driver option, it sets things back as they were.

The only program that uses the old, "real" printer driver while GPFax has patched it is GPFax itself - but if you've selected GPFAX.DRIVER as the standard printer driver yourself, GPFax will think that's the "real" driver, and will try unsuccessfully to print to itself.

Pagestream prints because it doesn't use standard printer drivers; nothing that looks at the Preferences driver will work.

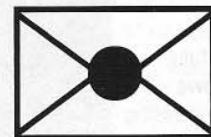
The solution's simple - when GPFax isn't running, set your printer up so that DPaint can print. Now GPFax's patching will work properly.

□

**Send your queries to
Dr Help care of:**

**Amiga Review
PO Box 288
Gladesville
NSW 2111**

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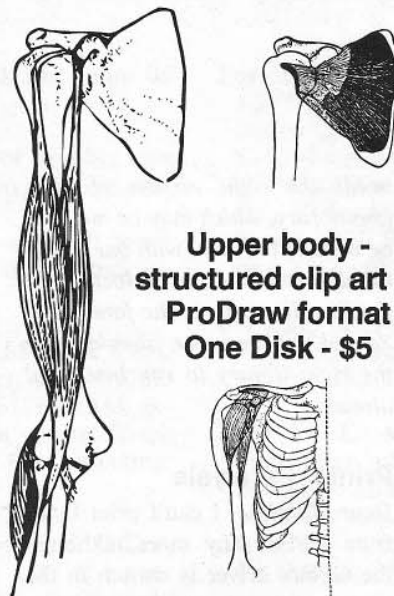


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| Author | Title | Publisher | 1st published |
|-------------------------|---|---------------------------------|---------------|
| Adams, Douglas | Dirk Gently's Holistic Detective Agency | Pan Books Ltd | 1989 |
| Adams, Douglas | Hitchhiker's Guide to The Galaxy, The | Quill Publishing | 1986 |
| Baum, L. Frank | Wizard of Oz, The | Mandarin Publishers Limited | 1982 |
| Beresford, Dick | Unconscious Boy's Own, The | Macdonald & Co (Publishers) Ltd | 1980 |
| Boardman, Tom Jr | Science Fiction Stories | Octopus Books Limited | 1983 |
| Burnet, Frances Hodgson | Secret Garden, The | Octopus Books Limited | 1983 |
| Carrrol, Lewis | Alice's Adventures In Wonderland | Octopus Books Limited | 1981 |
| Clarke, Arthur C. | 2010: Odyssey Two | Granada Publishing Limited | 1982 |
| Clarke, Arthur C. | 2010: Odyssey Three | Granada Books | 1988 |
| Crichton, Michael | Jurassic Park | Random House | 1991 |
| Davis, Jim | Garfield: Here's Looking at You | Ravette Books Limited | 1985 |
| Davis, Jim | Garfield: Life And Laughs | Ravette Books Limited | 1986 |
| Davis, Jim | Garfield: We Love You Too | Ravette Books Limited | 1985 |
| Evans, Sir Arthur Conan | 1st Novel: The | Heinemann Publishing | 1986 |

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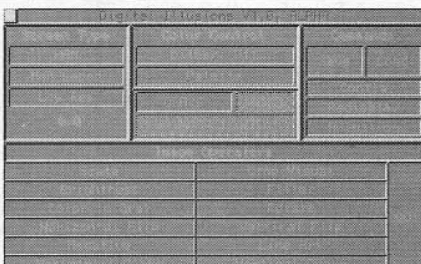
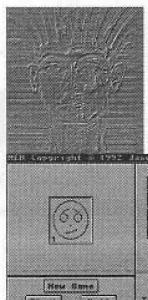


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NEW NEW NEW NEW NEW NEW

Workbench 3.0

NEW NEW NEW NEW NEW NEW

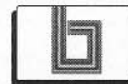
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- #7 - Amiga Tanx, Cave Runner, X-Fire, Bally III, Llamatron, Chess-O-Matic
- #8 - Asteroids, Bug Blaster, Microbe, Poling, Revenge of the Mutant Camels, Ring War, Trux
- #9 - Pacman (brilliant copy of the original), OmegaRace, Columns, Nebula and POD.
- #10 - Donkey Kong, Galaga (the best!), Artillerus, Fleuch
- #11 - Scorched Tanks - the latest super version, 2-4 players.
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- Pagestream Enhancer - requires Pagestream 2.x or better. New drivers, Postscript utilities and more.
- Professional Page Enhancer - requires PPage 3.x or better. Lots of great goodies for smart borders, copying pages, group, special effects.
- PageSetter 1.2 - Entry level desktop publishing program.

Cartoons (Require 1Mb FREE)

- Cartoon 1: Batman, Shuttlecock, Stealthy
- Cartoon 2: Amy Vs Walker
- Cartoon 3: Jugette, Jugette 2, Juggler 2
- Cartoon 4: F16 Combat, Stealthy Manver II
- Cartoon 5: Bigs Bunny - Big Cartoons (Require 3Mb)
- Big Cartoon 1: Anti-Lemmings
- Big Cartoon 2: Coyote
- Big Cartoon 3: Pogo
- Big Cartoon 4: The Dating Game (2 disks)
- Big Cartoon 5: Unsporting
- Big Cartoon 6: Enterprise Docking
- Big Cartoon 7: Bait-Masking

Education

- Education 1 - Elements, Draw Map, Rubik, Space Log, Gears

- Education 2 - Gravity Well, Planets, Life Cycles, Orbit, Enigmas, ZPlot
- Education 3 - Word Puzzle, Crossword, Word Game, A-Solve, POWER LOGO!
- Education 4 - PlotMap - Two disk set - creates maps of world, save in IFF format.
- Hypertext - Create text files with links to animation, graphics, sounds, songs - anything (via AREXX). 1Mb & WB2.x required.
- Stockmarket Simulation - Buy and sell shares, take out a bank overdraft, and eventually qualify to join the insiders club. Local program to simulate local conditions.
- Chemistry - Create 3D models of different molecules

Emulation

- Atari Emulator - German Only
- MS-DOS Emulator - PC-TASK (shareware-no write to disk) & Transformer. Run most MS-DOS business software.
- C64 Emulator - Run C64 Program, Interface C64 Peripherals (opt. Interface available from U.S.A. Only)

Graphics and Animation

- Graphics 1 - Still Store: For sequencing stills for video production
- Graphics 2 - Mostra, ImageLab, TitleGen, sMovie, ABridge, SceneGenDemo, SlideMaster
- Graphics 3 - Icon-Editor, Turbo Title, Cyro-Animation Utils
- Graphics 4 - FreePaint, Graffiti, PED, PicBase - IFF Database
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- Tracks 3 - Cloud Song, Creation 2, Crookets, Ear, Electric Dreams, Last Ninja II, Megaforce, Metal Synth
- Tracks 4 - Oxygen, Piano-Plink, PopCorn, RSI-Hard, Skylight, Smoke, SuperBASIC, Tocatta
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How to add a hard drive to an A570

By Glen De Witt

Many Amigoids who are still using a trusty old A500 have taken advantage of the recent low pricing on the Commodore A570 CD-ROM drive, which plugs into the 86 pin side expansion connector of the A500. I was lucky enough to find an A570 for the bargain price of \$99.00 from Sigmacom in Sydney.

To run the A570 you need an A500 with the 1Mb Fatter Agnus chip and Workbench 2.0 or better. These upgrades are necessary for the A570 to function, and also make your old 500 a much more useful computer.

But once you've fitted an A570 to your side port, how do you add that other desirable expansion, a hard drive? You can't use the trapdoor socket under the machine - that's just for RAM.

You use a CDTV SCSI interface, that's how; I got a JEC CDTV SCSI card from Don Quixote. The documentation with the board is limited, but it's simple enough to install. You just plug it into an expansion slot under a plate on the back of the A570.

The 25 pin D type SCSI connector on the card makes it easy to plug in any boxed external hard drive, if you get the right cable; if

| Hard Drive Pin Connections | JEC SCSI Connector Pins |
|----------------------------|-------------------------|
| # 2 Data 0 | # 8 Data 0 |
| # 4 Data 1 | # 21 Data 1 |
| # 6 Data 2 | # 22 Data 2 |
| # 8 Data 3 | # 10 Data 3 |
| # 10 Data 4 | # 23 Data 4 |
| # 12 Data 5 | # 11 Data 5 |
| # 14 Data 6 | # 12 Data 6 |
| # 16 Data 7 | # 13 Data 7 |
| # 18 Parity | # 20 Parity |
| # 20 Ground | # 14 Ground |
| # 22 Ground | # 16 Ground |
| # 24 Ground | # 18 Ground |
| # 26 Termination Power | # 25 Termination Power |
| # 28 Ground | # 24 Ground |
| # 30 Ground | # 24 Ground |
| # 32 ATN | # 17 ATN |
| # 34 N.C. | |
| # 36 BSY | # 6 BSY |
| # 38 ACK | # 5 ACK |
| # 40 RST | # 4 RST |
| # 42 MSG | # 2 MSG |
| # 44 SEL | # 19 SEL |
| # 46 C/D | # 15 C/D |
| # 48 REQ | # 1 REQ |
| # 50 I/O | # 3 I/O |

For the SCSI 50 pin connector, all odd pins except pin 25 are at ground. Pin 25 is open.

you want to do it on the cheap and build it all yourself you'll likely have to solder lots of tiny wires. Good luck.

The accompanying diagram gives the pin to pin connections for hooking up a 25 pin SCSI connector to the standard 50 pin connector on the back of a drive.

If you're not using a boxed external drive with its own power supply, you'll also need to find some way to give the drive the voltages it needs. I decided to risk hacking into the power supply of the A570 rather than purchase another supply just for the hard drive.


I could buy a secondhand IBM power supply cheaply and use that, but the thought of having three power supplies on my desk was

too much to bear, and to avoid it I'd have to rewire the monster IBM supply to power everything, which is too much like hard work.

After a short time cutting and splicing cables from the motherboard to the A570 CD drive, I fitted another plug to fit the hard drive's power supply input. It worked.

I'm happy to say that the whole business is operating just fine now. I can transfer files straight from the CD to the hard drive easily, and using the hard drive has sped up the system so much that I wonder how I put up with the floppy based system for so long. Now, as any hard drive owner will bleat, I need a bigger one!





Real 3D versus Lightwave

By Bernie den Hertog

► How many magazine articles have you read raving on about how amazing Lightwave 3.5 is? In case you have been in a hole the last year, NewTek have now released the PAL version (Read - the one people outside the USA can use) of Lightwave. Formerly the 3D component of the famous Toaster system, it's now a standalone package. And everybody LOVES it; almost every Pommie mag has slammed Imagine 3 and put Lightwave on the top shelf, ignoring all other packages and announcing it as "The Champ".

Well, everyone's entitled to an opinion, but 3D packages are more than just a pretty interface. It all boils down to the end product. The render. The package isn't worth diddly squat if it doesn't produce a fine picture.

This article doesn't set out to put down Lightwave - it's an

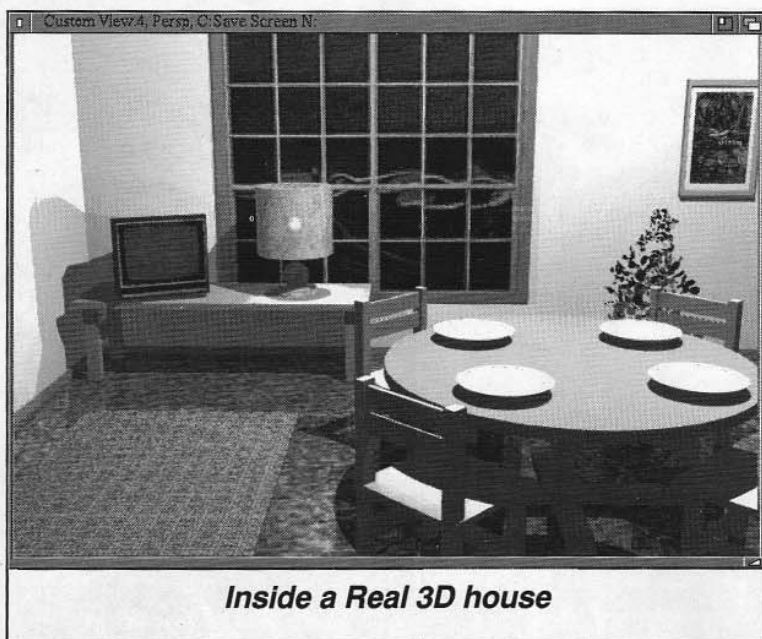
excellent package with some really, really good aspects. But I don't use it. Maybe it's my fault, but the results I get from Lightwave don't work for me, and the rendering is slow. I just want to call the attention of renderers out there to the advances made in recent versions of Real 3D.

REAL

Real 3D V2 has had many updates since its initial release in Australia. The first version I got was 2.33; all the fantastic blurb about Inverse Kinematics and skeletal control hid a program that had some cool stuff but somehow just didn't quite work. There were automatic landscape generators, fractal trees - millions of options and permutations, which proved totally daunting and complex and still fell short of the mark.

This was the version that many magazines reviewed.

Real was still in its infancy. Magazines announced "A highly powerful yet complex program". Those moving up from Sculpt 3D/4D and Imagine 2 were completely perplexed, as Real uses BSpline meshes to create freeform shapes while Lightwave, Imagine, 3D Studio etc. use triangular faces as a surface subdivision method. BSplines are a step in the CAD/Silicon Graphics direction, with which home users were unfamiliar. While using primitives derived from mathematical formulae is far superior in rendering quality, it is also inherently difficult to create complex deformations. In Lightwave, you have to add a sphere, stretch it, and use the magnet to pull certain points up to create a fish. In Real 3D, you just draw the fish as if it were sliced



Inside a Real 3D house

into 10 or so pieces, and mesh them together. BSplines are a more complex way of doing things, to obtain a better end result. But people want speed and ease of use. It's unfortunate that Real 3D has received little exposure after 2.33. This memory hungry version has since been upgraded several times, to the current v2.49.

For only \$90, all 2.3x owners can upgrade to 2.49, and the improvement is well worth it. 2.49 has superior memory management, is far more stable, has newer tool icons for speedier modelling / animation, key framing, better animation editing, material preview, import and export DXF and a ton of other features.

Why 2.49?

Recently, Real 3D has been released for Windows, Windows NT for DEC Alpha and Windows NT for MIPS. All are v2.49. They are all binary compatible, which means files can be interchanged regardless of platform. This means a larger user base, which benefits everyone.

Lightwave vs Real

Lightwave is excellent for dealing with smaller models - a bouncing ball, rocking chair, spacecraft zooming past a planet or whatever. Lightwave's strength really lies in animating objects quickly and simply.

But when a model becomes more complex, for example a house, Real is the program of choice. Lightwave is certainly capable of handling complex objects, but modelling an object, importing it into Layout and back and forth several hundred times is not my idea of seamless operation.

I'm an architect by trade and work as a CAD manager, using MicroStation for DOS boxes (a \$6000 CAD package). This is where Real 3D can really come into its own. Real uses a hierarchical modelling method, where one names each object and puts it under a level. So if you're modelling a house, the chairs go under the table level, which in turn goes under the furniture level, which is under the house. To move the house over, one simply selects the house level and moves it. It may

seem excessive to type a name for everything, but the hierarchical method is an excellent way of modelling complex things.

Lightwave has some really neat snappy features such as lens flares (a fiddle to set up using Real) and several other features which make animating logos a breeze (diffusion maps, copying paths from one object to all others, animating something first with a simple model then replacing it with your complex object). Lightwave's font management is great - just select the font and type the name and the font is extruded the given depth for instant text. Real's fonts are made up from a series of primitives and/or meshes which are inherently large and complex to render. Lightwave thus has some inherent advantages over Real, but in my opinion doesn't have a diverse enough range of tools.

External devices - Real 3D

One of the fallacies being thrown around by dealers is that Real cannot render to 24 bit boards such as Opal or Picasso, so buy Lightwave. Nonsense! Real can render to almost any external device. Real also works with most go fast boards - Vivid 24, Warp boards, Raptors and so on are all addressed by Real 3D by using the additional SARE (Stand Alone Render Engine - Amiga \$180, IBM \$280) or ANDRE's (Automatic Distributed Render Engine). The SARE requires the project to be loaded onto each machine and set rendering (IBMs can render Amiga Projects and vice versa), while the ANDRE does this automatically across a network to any computer (SGI, DOS, Amiga, Raptor...).

The Personal Animation Recorder (PAR) is also completely compatible with Real 3D. Frames can be imported or exported as simply from Lightwave or Real.

Real interface

It's true that Real doesn't have a standard interface, but this makes it inherently flexible. Real's interface is totally system compliant and multitasking. I often jump from Real to paint a texture in OpalPaint or DPaint, then crop the file using ADPro and copy it to the relevant drawer with Directory Opus.

Version 3.1 of Lightwave ties up the system both when rendering and modelling. Version 3.5 (PAL) lets you jump to workbench and the Layout & Modeller are no longer one asynchronous program, but Lightwave is still a ready made system and the user is forced to use it "as is". You can't change the hotkeys or interface.

Not so with Real. Everything is configurable - sometimes too much so that beginners get lost. But the flexibility is a real boon. Real allows any window to be rendered in any mode (Draft, shadowless, full raytrace...) and you can keep modelling while you're rendering. Multitasking is so "Amiga" that it takes 3 IBMs at work to keep me busy!

I really like the Real interface; you can open a four colour screen for modelling, a HAM-8 screen for renders and the External screen is always available for 24 bit work. Lightwave starts rendering, and that's it. It takes some 10.5Mb of RAM to render in medium res, in 1 segment. That's before the objects are even considered.

Deficiencies

People often relate best to the program they learned first. While I would be a liar to say that Real doesn't have a steep learning curve, it's definitely worth persevering.

Digipix have said that a few training videos are in the works, and the 2.49 version of the manual (IBM) is available for \$100. The

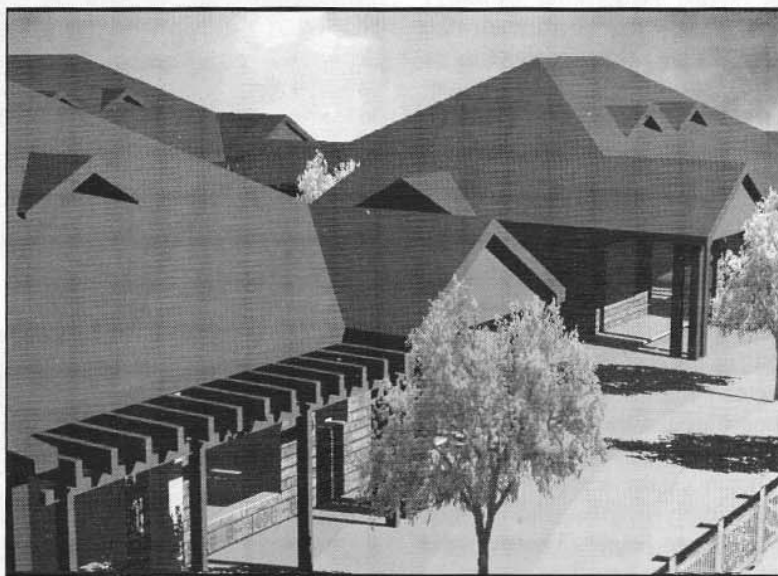
Amiga manual is only up to v2.33, but there's a text file for each upgrade.

The Measuring window leaves a lot to be desired; while it's very accurate, you have to hold down the CTRL key for the sizes to take effect. A CAD-type command line would be easier.

Meshes, despite their quality, are extremely complicated to work with. They devour memory and are not "solid". Freeform models of items like dogs, rabbits and peo-

ple are far easier to create using triangles. But B-spline modelling is the method used in many high end CAD and rendering packages, so if you're planning to jump to another package, a grounding in both types of modelling is preferable.

Real's general complexity is still high. Trees should be a lot simpler to make, and skeletons should be more intuitive. Lighting, Cameras and TAGs also need to be simplified.



CASE STUDY

- The War Memorial

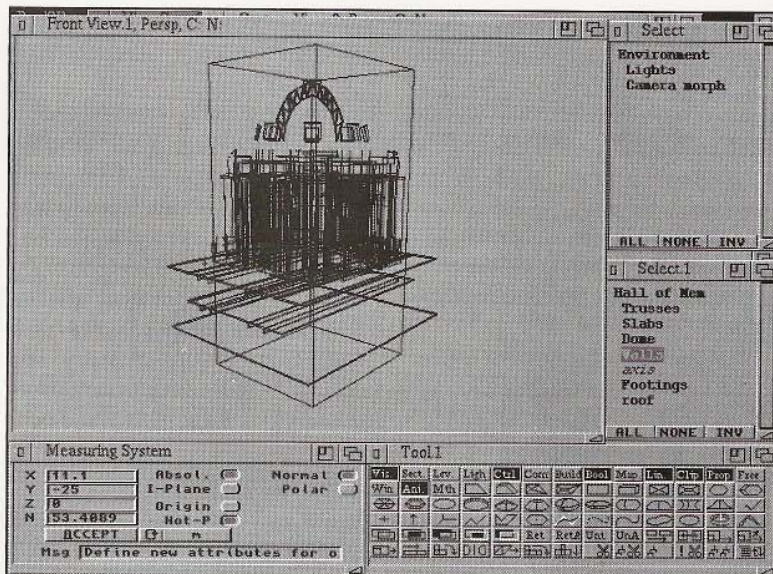
A recent project of mine required the modelling of the War Memorial in Canberra. Engineers wanted the "Hall of Memory" as a 3D model for illustrative purposes, to show load paths from the roof to the footings and problem areas. Little documentation existed on this part of the building and what little there was proved wrong. The basic shape of the building was put in in roughly 90 minutes. Using the CAD stations at work, I digitised the floor plans of the three floors. These simple outlines were DXF'd out as three long lines, then imported into Real 3D. Each line was given its own level and turned off so only one was showing.

Dragging the mouse over the line while holding down SHIFT selects each point on the line. You then select CREATE-POLYGON and right Amiga-" to pull all vectors off the stack. This then zooms around the line with all the points highlighted and draws a polygon of the same shape. You then simply lengthen the polygon to the given height (3 metres) and hey presto - one wall.

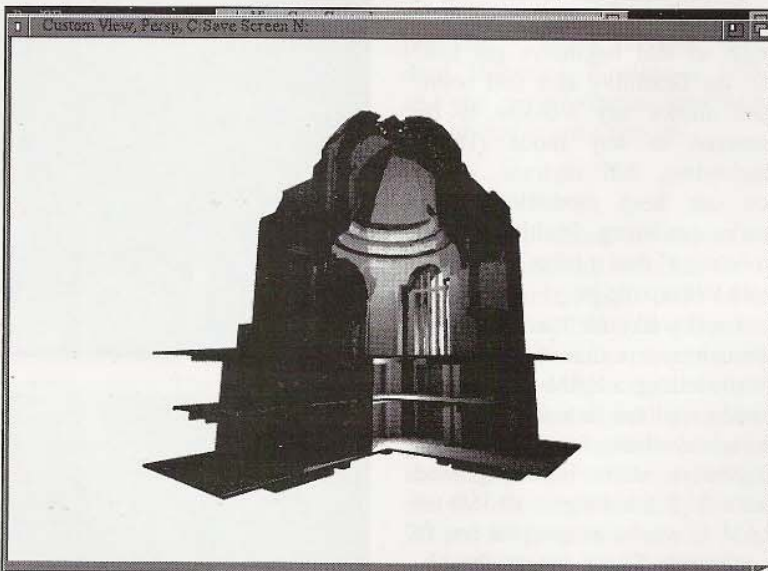
I did the same thing for the other two floors - I could have just extruded the DXF line but that would make a mesh.

The roof has a series of curved trusses and a dome over the top. Again, I digitised and DXF'd the Sections, and then traced the truss using Compound Tools (in which you one define a cross-section shape then draw the elevation - like a snake) to make a single truss. I then used another powerful Real feature - recordable macros.

You just press the M key to start recording; duplicate the truss, rotate it 30 degrees using the Measuring window then the M key again. Pressing the x key now duplicates the truss and rotates it



Transforming the DXF files into walls



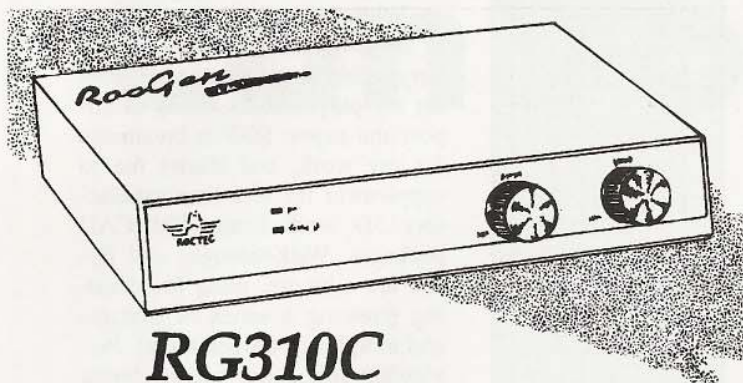
30 degrees. By pressing the y key, this macro can be executed a given number of times - in this case, 10 times. I then drew the roof itself, using a curve (traced off the DXF file) I defined an axis (just the middle) and rotated the curve around it. Done!

The rest of the building just needs some fine tuning and some cubes for floors. Doors and windows are added simply by thinking

in reverse - if you want a door, draw the hole it's meant to go in and cut it out from the wall. This procedure, known as "Boolean" operations, is the most powerful part of any 3D program.

Real really shines by being able to not only cut a single door out of a wall, but to copy the door cut in the same level a hundred times along the wall.

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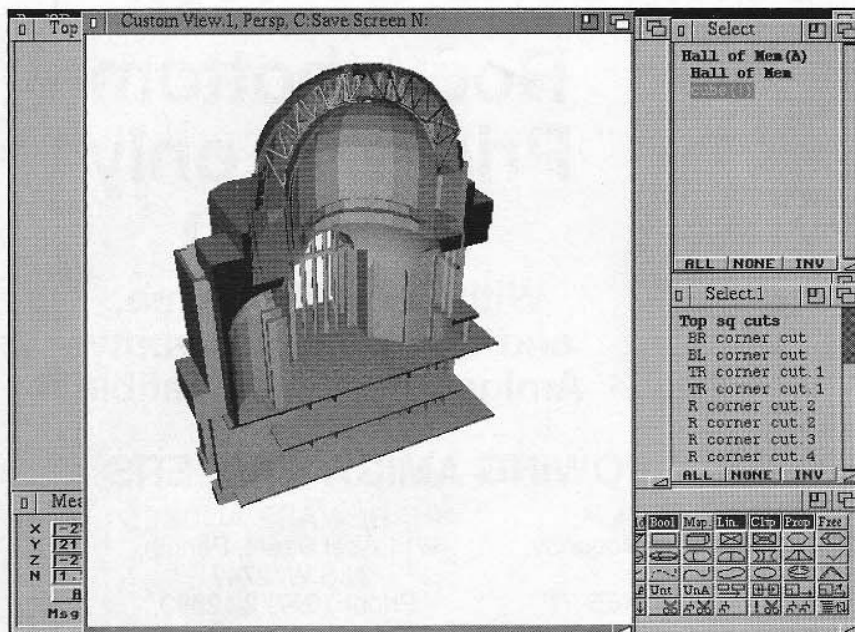
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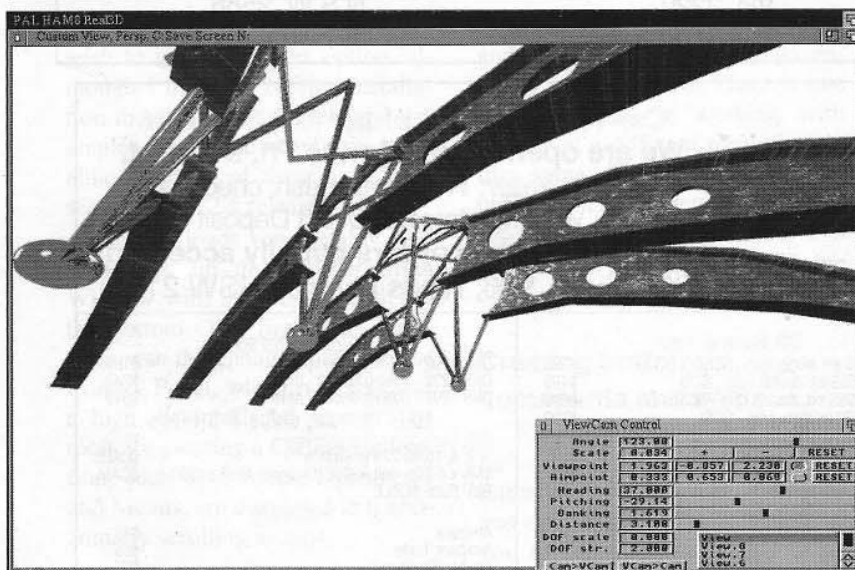
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Using the ViewCam Control - in HAM8

The War Memorial model also has a big cut at 90 degrees right through the middle. I did this by simply using a cube to cut the whole building. I generated a series of views showing a complete (long) section by stretching the cube longer. The building was fi-

nally exported out as a DXF file for use in MicroStation, where it imported beautifully (including meshes & all primitives) but, alas, without the Boolean cuts. Version 2.5 promises better DXF import / export.

Thoughts

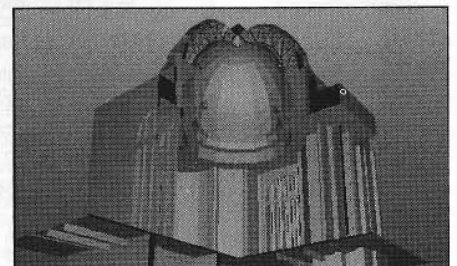
While by no means all things to all people, Real 3D has proven very stable in practice and is ideal for my purposes. Its ability to import and export DXF is invaluable for my work, and allows me to supplement the less than satisfactory 3D work from IBM CAD packages. Walk-throughs and fly-bys are a breeze, using key framing (creating a series of cameras and morphing between them). Pre-viewing animations and rendering them is simple and very powerful.

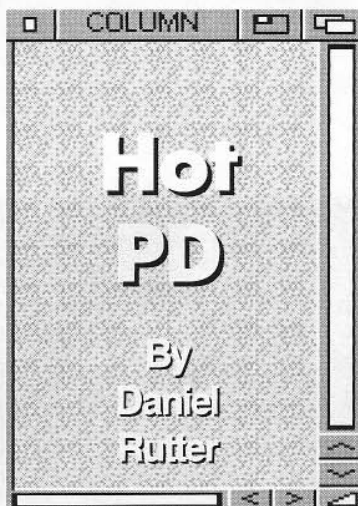
Everything is editable to the very integer, or you can work from a more wholistic view and let the program do everything.

I can play a walk-through as a Delta file (Real's proprietary animation player), press record on my VCR, add a few credits using Montage and dub in an audio track dubbed over the anim. An hour later I can show a VHS tape of a series of animations and full renders, with compliments all round. I owe it all to Real 3D.

Version 3 is due mid next year and promises a complete re-write. Meanwhile, 2.5 (due soon) will keep me going. I feel that this excellent package is severely underrated by the press and deserves more attention. Lightwave is deservedly good and is ideal for animators, but Real holds the power stakes easily. Feature for feature, the program is huge.

For a review of Lightwave see the September '94 issue Vol 11, No. 9 - "Lightwave 3D", and Vol 12, No. 1 - "Lightwave Goodies".





► A few more submissions from readers this month (it's SO cool when I don't have to find things for myself!), plus something a bit unusual that every home should have, and the latest Fish mega-compilation. Enough with the introduction. On with the show.

AppIExec



Here's a simple extra for Workbench users. It's a program for making Applcons that do different things. Applcons are one of the many new features of Workbench 2 that not a lot of people use, but they can be quite nifty when correctly applied. An Applcon appears on the main Workbench window and can't be moved, deleted, copied or snapshotted, but can act on other icons when you drag the other icon on top of it.

You can assign any regular Shell command to an Applcon by using AppIExec, as long as the only argument you want to pass to it is the dragged icon's name and/or path. So you can use it to make an edit icon, a delete icon or an extract-archive-to-RAM button, but nothing more complex than that. You can drag multiple files, though, and AppIExec passes the info through just fine.

The implementation's a bit lumpy; you need a separate copy of AppIExec for every Applcon you wish to create, renamed to

whatever you want the Applcon called and with a single ToolType line that says COMMAND= and then the command you want to run. Of course, Power Users can make links so that there's only one real copy of AppIExec and lots of ghost version with different names, but it'd be nicer if you could simply start the program with lots of COMMAND tooltypes and see a whole row of icons pop up automatically.

Nonetheless, this is a neat program, and it's on the companion disks.

FontView



This squib may make your font-handling life simpler. It lets you load any font from any directory (not necessarily just sys:fonts/), and view it on any screen you like - so you can see what a given font looks like on the oddball superhires screen you just opened for your titling package, or whatever.

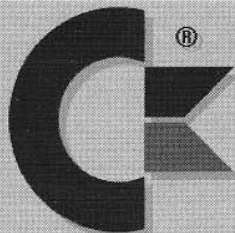
You can display bitmapped or CompuGraphic fonts, you can toggle bold, italic and underline, and you can run FixFonts to update all your .font files by clicking a button. You can also view statistics on the font you've loaded. Simple, fairly useful, worth a look.

AWS



I've been using this little trinket for a while now; it's essentially another of the many programs that display a picture while you boot. These are quite pointless, but AWS at least pretends to be useful - it displays some basic system information while you boot. Of course, you probably already know what processor, graphics chipset, OS version and so on you've got, but





AMIGA WORKSTATION

| | |
|---------------|----------|
| CPU..... | 68030 |
| FPU..... | NONE |
| GFx Chips... | ECS |
| Kickstart ... | 37.175 |
| Memory | 9216 Kb |
| Time | 22:55 |
| Date | 06-02-95 |

Copyright © Commodore Electronics Ltd. 1985-1993.
All Rights Reserved.

**Lose the Commodore logo, and
AWS would look really cool.**

it'll impress your friends. You can even display the status screen in various different colour styles. Practical? No. Cool? Yes.

SkoEd



I reviewed this program a couple of months ago, and here it is again. All the old features are of course still there - remappable, customisable commands, multiple files and multiple views, simple IBM text file conversion, columnar blocks, clipboard support, autosave, folding, bracket matching, braces counting, word completion,

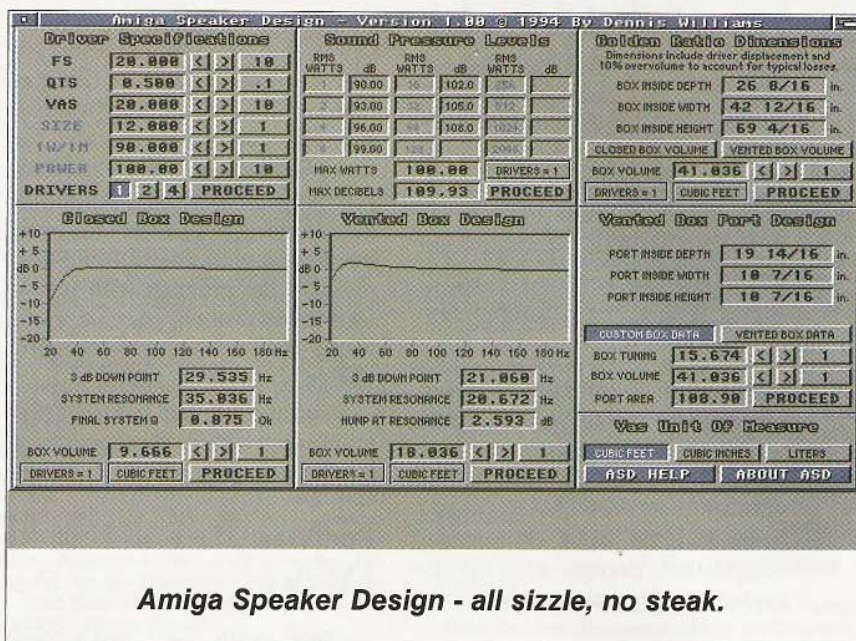
Complexity:

- ☆ Flat earther
- ☆☆ Elvis cultist
- ☆☆☆ Crop circle hunter
- ☆☆☆☆ Illuminatus member

a memory file that reloads previously loaded files with the cursor in the right place, unlimited bookmarks, an undelete function, iconification, a full ARexx port, a configurable gadget strip and more.

Added are a number of bugfixes - which, somewhere along the way, seem to have killed off the crashing problem I experienced with the previous version - and SkoEd's search and replace has been greatly accelerated. It now takes 8.7 seconds on my 40MHz 030 machine to replace 26,645 e's with x's in a large text file, against the more than 45 seconds the old version took. CygnusEd still scored better, with 5.2 seconds, but there's not much difference now unless you're playing with truly monster files, or using a slow machine.

The sped up search and fixed bugs make this a truly excellent editor. It's got some oddities - it's not perfectly style guide compliant and some bits are in the wrong place - but since CygnusED also has a number of quirks I can easily forgive that. Well worth a try, if you're looking for a decent text editor.



Amiga Speaker Design - Version 1.00 © 1994 By Dennis Williams

Driver Specifications

| | | | | |
|---------|--------|---------|---|----|
| FS | 20.000 | < | > | 10 |
| QTS | 0.500 | < | > | .1 |
| VAS | 20.000 | < | > | 10 |
| SIZE | 12.000 | < | > | 1 |
| (W/T) | 98.000 | < | > | 1 |
| POWER | 100.00 | < | > | 10 |
| DRIVERS | 1 2 4 | PROCEED | | |

Sound Pressure Levels

| RMS WATTS | dB | RMS WATTS | dB | RMS WATTS | dB |
|--------------|--------|-----------|-------|-----------|----|
| 90.00 | 90.00 | 102.0 | 102.0 | | |
| 92.00 | 92.00 | 105.0 | 105.0 | | |
| 96.00 | 96.00 | 108.0 | 108.0 | | |
| 99.00 | 99.00 | 110.0 | 110.0 | | |
| MAX WATTS | 100.00 | DRIVERS | 1 | | |
| MAX DECIBELS | 109.93 | PROCEED | | | |

Golden Ratio Dimensions
Dimensions include driver displacement and 10% overvolume to account for typical losses.

| | |
|-------------------|-------------------|
| BOX INSIDE DEPTH | 26 8/16 in. |
| BOX INSIDE WIDTH | 42 12/16 in. |
| BOX INSIDE HEIGHT | 69 4/16 in. |
| CLOSED BOX VOLUME | 41.036 CUBIC FEET |
| DRIVERS | 1 |
| PROCEED | PROCEED |

Box Design

Closed Box Design

3 dB DOWN POINT: 29.535 Hz
SYSTEM RESONANCE: 35.036 Hz
FINAL SYSTEM Q: 0.875

Vented Box Design

3 dB DOWN POINT: 21.060 Hz
SYSTEM RESONANCE: 20.672 Hz
HUMP RT RESONANCE: 2.593 dB

Vented Box Port Design

| | |
|--------------------|-------------------|
| PORT INSIDE DEPTH | 19 14/16 in. |
| PORT INSIDE WIDTH | 10 7/16 in. |
| PORT INSIDE HEIGHT | 18 7/16 in. |
| BOX TUNING | 15.674 Hz |
| BOX VOLUME | 41.036 CUBIC FEET |
| PORT AREA | 100.90 |
| PROCEED | PROCEED |

Units of Measure

CUBIC FEET CUBIC INCHES LITERS

ASD HELP ABOUT ASD

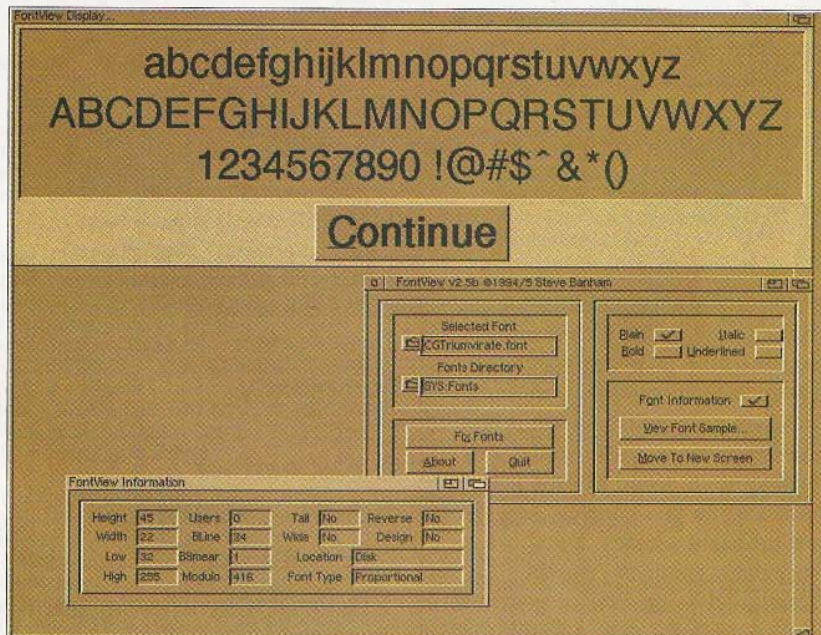
Amiga Speaker Design - all sizzle, no steak.

AIBB 6.75



The premier Amiga benchmarking package has hit v6.75. I haven't mentioned it for more than a year now, because none of the updates were exactly world shaking - there's been nothing but bugfixes and minor things like a few more expansion boards recognised

since v6.0. This means AIBB's got all the features it needs, which is a good thing because it means its a properly mature test program which covers all areas, and also means we shouldn't have another version change which brings with it a new module format, so you can't load your old test results into the new program. The extra stability of 6.75 is worth having; it's on the companion disks.



FontView Display

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890 !@#\$%^&*()

Continue

FontView v2.5b ©1994/5 Steve Bantian

Selected Font: CGTriumvirate.font
Font Directory: SYS:Fonts
Font Information: View Font Sample... Move To New Screen

FontView Information

| | | | | | | | |
|--------|-----|--------|-----|-----------|--------------|---------|----|
| Height | 45 | Users | 0 | Tall | No | Reverse | No |
| Width | 22 | Blune | 34 | Wide | No | Design | No |
| Low | 32 | B9near | 1 | Location | Disk | | |
| High | 255 | Modulo | 416 | Font Type | Proportional | | |

Virus Checker 6.47



Here's another program that's seen a couple of updates since I last mentioned it. Since v6.41, John Veldhuis' excellent automatic virus checker's gained a raft of improvements. Many are, of course, bugfixes (some quite major), but there's also improved ARexx support, unpack.library support for the registered versions that give more elegant checking of archived files and a proper killer for the devious and hard to type Polzygotronifikator virus. There's also a change to stop the illegal keyfile generator written by some mongrel (and I quote) from Germany.

Agraconv



This is one for the coders - it lets you convert IFF graphics to RAW mode easily, with a nice graphical interface. You can save RAW, BLTRAW, RAW MASK, SPRITE 4, SPRITE 16, IFF, C source or RGB format with a click on a menu, and multiple resolutions and AGA graphics are supported. You'll know if you need this one, and it's on the companion disks if you do.

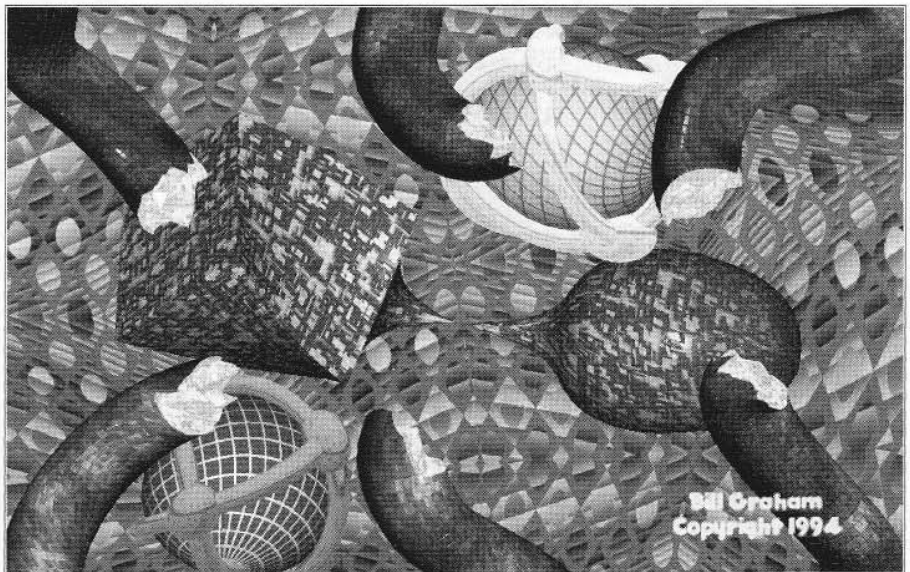
The Jargon File



It has come to my attention that there are some computer users out there who have not so much as read the Jargon File, much less own a copy. What a poor, sad life they are leading.

The Jargon File was born as a collection of hacker jargon from various ARPANET-linked technical cultures way back in 1975, and contains terms which date back to the early 1960s, which in computer terms is at least three quarters of eternity. It's been changing and evolving ever since, with all sorts of hackish English usage being added to it over the years. On the way, there have been a couple of paper versions - The Hacker's Dictionary and the New Hacker's Dictionary - but these lack the elegance and access speed of the digital original.

The version I'm talking about is 3.0.0, dated 27 Jul 1993 - but although the text might be a bit elderly now, the format more than makes up for it - some lovely person's made it into an AmigaGuide file. This means that instead of wallowing through well over a megabyte of plaintext, you can flit around it with simple hypertext links.



One of the nifty images on Goldfish 2.

Why do you want it? Well, to impress like-minded propellor-heads, of course, and also to find those handy terms for which there is no real English equivalent. A few randomly chosen examples follow.

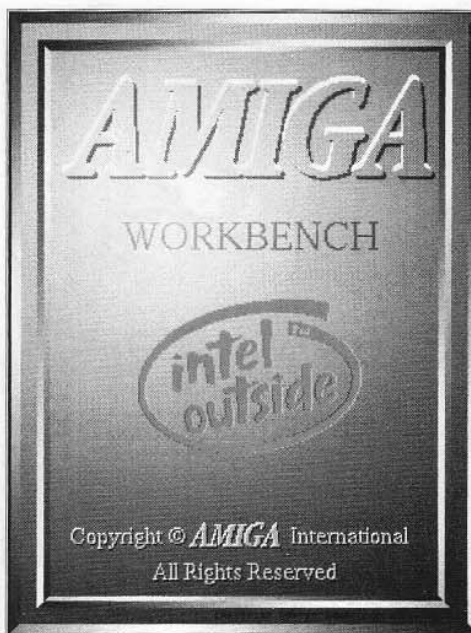
PLOKTA: [Acronym for "Press Lots Of Keys To Abort"] v. To press random keys in an attempt to get some response from the system. One might plokta when the abort procedure for a program is not known, or when trying to figure out if the system is just sluggish or really hung. Plokta can also be used while trying to figure out any unknown key sequence for a particular operation. Someone going into "plokta mode" usually places both hands flat on the keyboard and mashes them down, hoping for some useful response.

Dogwash: [From a quip in the "urgency" field of a very optional software change request, circa 1982. It was something like "Urgency: Wash your dog first".] 1. n. A project of minimal priority, un-

dertaken as an escape from more serious work. 2. v. To engage in such a project. Many games and much "freeware" get written this way.

Whalesong: n. The peculiar clicking and whooshing sounds made by a PEP modem such as the Telebit Trailblazer as it tries to synchronize with another PEP modem for their special high-speed mode. This sound isn't anything like the normal two-tone handshake between conventional modems and is instantly recognizable to anyone who has heard it more than once. It sounds, in fact, very much like whale songs. This noise is also called "the moose call" or "moose tones".

Walking drives: n. An occasional failure mode of magnetic-disk drives back in the days when they were huge, clunky "washing machines". Those old dinosaur parts carried terrific angular momentum; the combination of a misaligned spindle or worn bearings and stick-slip interactions with the



floor could cause them to walk across a room, lurching alternate corners forward a couple of millimeters at a time. There is a legend about a drive that walked over to the only door to the computer room and jammed it shut; the staff had to cut a hole in the wall in order to get at it! Walking could also be induced by certain patterns of drive access (a fast seek across the whole width of the disk, followed by a slow seek in the other direction). Some bands of old-time hackers figured out how to induce disk-accessing patterns that would do this to particular drive models and held disk-drive races.

Big Red Switch: [IBM] n. The power switch on a computer, esp. the "Emergency Pull" switch on an IBM mainframe or the power switch on an IBM PC where it really is large and red. Sources at IBM report that, in tune with the company's passion for TLAs (Three Letter Acronyms), this is often abbreviated as "BRS". It is alleged that the emergency pull switch on an IBM 360/91 actually fired a non-conducting bolt into

the main power feed; the BRSes on more recent mainframes physically drop a block into place so that they can't be pushed back in. People get fired for pulling them, especially inappropriately.

Molly-guard: [University of Illinois] n. A shield to prevent tripping of the Big Red Switch by clumsy or ignorant hands. Originally used of the plexiglass covers improvised for the BRS on an IBM 4341 after a programmer's toddler daughter (named Molly) frobbed it twice in one day. Later generalized to covers over stop/reset switches on disk drives and networking equipment.

If all the definitions aren't enough (and there are more than 2000 of them), you also get all of the Appendices, which cover hacker-spotting for the beginner, a number of nifty stories that didn't fall under any other classification (including The Story of Mel, A Real Programmer, which is required reading for anybody who think's he's a bit of a whiz on the keys), and a recommended reading list. Look, kids, you need this file. You want this file. Get this file.

In order that you, may get this file, I have put it on the companion disks in archived form, with one of my usual five-minute bare-metal installation systems. To view the Jargon File you'll need AmigaGuide; there was enough room, so I included it. You'll also need somewhere with enough space to hold the File's bulk; ideally a hard disk with a couple of spare megs, but a floppy machine with lots of RAM will do in a pinch.

Incidentally, a note to Persons Opposed to Scatological Language - The Jargon File contains a few words not broadcastable in prime time. You have been warned.

The companion disks for this column are called HotPD 21 a and

b, and are available from Prime Artifax PD on 008 242 879 for \$9.50 the pair. Bargain.

GoldFish 2

A highlight of my PD life recently has been the arrival of a copy of GoldFish 2, the second twin-CD super-compilation from Fred Fish, King of Amiga PD and shareware.

The GoldFish discs include the new stuff of the FreshFish discs, which are the regular updates Fred's now releasing after giving up on floppy disk distribution. Incidentally, Amazing Computing is continuing Fish floppy distribution, culling good stuff from the CDs and other sources and putting it on floppies with Fred's blessing.

The FreshFish disks are, indeed, partly fresh - and partly rather stale, since they contain all the old floppies as well to make up the extra, after the mere 150Mb or so (!) that Fred manages to find for each issue.

All the new stuff, though, gets rolled together and released as GoldFish, and it's an excellent purchase for any CD-equipped Amigan.

The stuff on GoldFish isn't all especially recent - it just never made it onto the floppies. Most of it's good, though, and at more than 600Mb per disc you can forgive some duds.

The first GoldFish 2 disc contains 550Mb of ready-to-run (no archives) new stuff from FreshFish discs 1-7. There's also 55Mb of GNU binaries, libraries, runtime files, and documentation, which for the puzzled means a heap of stuff released under the very reasonable GNU Public License - it's mainly heavy duty shell-head coder-oriented UNIX-ported Real Man's Utilities.

You also get more than 30Mb

of support files including useful tools, libraries, and documentation.

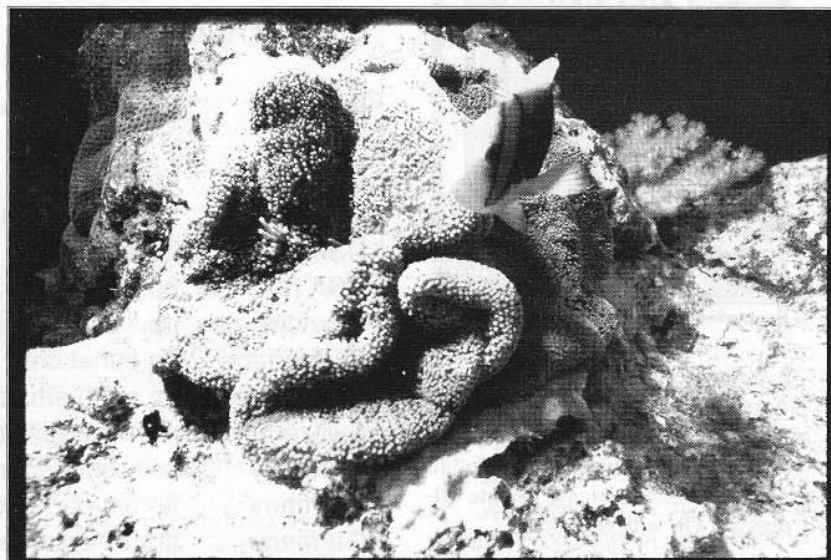
The second disk is billed as BBS-Ready, but might more accurately be described as Amiga BBS Ready, since it's still littered with long filenames which cause IBM systems to launch their lunch. Neither of these discs is usable for people who do not have a CD-Rom equipped Amiga. Be warned.

This second disc contains all the FreshFish stuff from the first disc, archived, 207Mb of unarchived GNU source code (it's good that this stuff is on a separate disc, since most users don't want to see it), and another raft of support files.

There's lots of stuff on the CDs that wasn't released on floppy because of simple space considerations - huge pictures and animations, for example (interestingly, GoldFish doesn't have any sounds or music MODs). There's a load of nifty underwater photos in JPG format. There are a few tasteful pictures to show while booting, with a program like BootPic on Fish 963. There are quite a few pictures taken by the Hubble Space Telescope, including a couple of dozen comet-hitting-Jupiter shots. There are more than 50 single-image stereograms, ranging from the excellent to the dodgy and all in GIF format.

One program that caught my eye and rapidly lost it again is Amiga Speaker Design, a quick and easy program for basic speaker box design, which has all the basic graphs and charts on one screen and looks quite professional.

Unfortunately, it's hogtied by the fact that although you can enter speaker diameter up to 30 inches (!), you can't give a VAS (Speaker Builder Jargon; lesser



Another GoldFish pic

mortals may progress to the next item) above 1001 (the big puppies in my speakers rate an easy 3001) and ASD's really stupid input method has you clicking buttons to enter numbers, like you don't have a keyboard. LEAP it ain't, but heck, it looks nice.

GoldFish 2 also has the Commodore developer v37, v39 and v40 Includes and Libs, of interest to C coders but not to anyone else; these are included with a stern warning not to redistribute them on anything other than the GoldFish CDs.

There's 6Mb of reviews of software, hardware, books and more, and sundry other text - Fish listings, the comprehensive OJ Simpson alleged-murder guide with sounds (if you haven't got it, you're not on the bandwagon), and, of course, more.

The indexing on GoldFish is good. There's no funky AmigaGuide indexing system like that on the most recent Aminet disc, but instead you get the latest version of the Kingfisher database system, updated with the CD contents as well as all the floppies,

and with a pointer at the end of every entry that tells you where you can find the file.

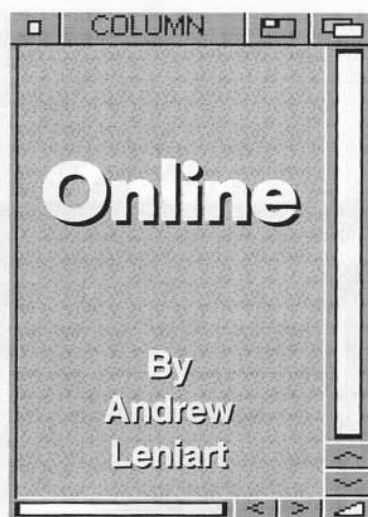
It's easy to use for simple searches yet capable of some powerful stuff, and it works far, far better than the alternative - poking through the index text files. If you run Kingfisher from the CD, though, you're not going to be searching too fast - even my triple speed drive is a bit tedious; users with single speed units should make space on their hard drive for the index.

There are a couple of teeny glitches on the CDs, but nothing to be alarmed about. Overall, it's excellent value for your \$59, as long as you don't already have a few good PD CDs; if you do, you'll find a lot of duplicated material.

To get the Hot PD Companion disks call PRIME ARTIFAX on 1800 252 879 or (02) 879 7455.

Contact Amadeus Computers on (02) 652 2712 to order your copy!

□



► Welcome back to Amiga Online. As promised, a couple more hints and tips on using the Internet for beginners this issue, along with some Internet Amiga FTP site addresses. On with the show!

FTP to where?

Since I started including Internet info in this column, my Internet mailbox has been flooded with requests for Internet FTP sites you can visit to grab new Amiga files. Here's the info you're looking for.

Without doubt, the best site to visit if you want to get the newest and greatest Amiga files is a site in USA called "wuarchive.wustl.edu". However, while wuarchive.wustl.edu accepts up to 250 anonymous callers at any one time, it is often hard to get onto because there usually ARE 250 anonymous callers on the site. This is where Mirror Sites come in handy.

What's a mirror site?

A mirror site is another FTP system (or site) which has mirrors (copies) of some or all of the files on the main site. Most mirrors are updated quickly (usually two or three times a day), so what you would find on the main Aminet site will usually be available at the mirror sites as well.

Here's a list of the current Aminet mirrors I'm personally aware of. Note that not all of them

SITE LISTINGS

| Location | Name / Site Address | IP Address | Files |
|-------------|--------------------------|-----------------|-------|
| USA (MO) | ftp.wustl.edu | 128.252.135.4 | ALL |
| USA (CA) | ftp.cdrom.com | 192.216.222.5 | 9000 |
| USA (TX) | ftp.etsu.edu | 192.43.199.20 | 5000 |
| USA (WI) | ftp.netnet.net | 198.70.64.3 | 10000 |
| Scandinavia | ftp.luth.se | 130.240.18.2 | 10000 |
| Switzerland | ftp.eunet.ch | 146.228.10.16 | 5500 |
| Switzerland | ftp.math.ethz.ch | 129.132.104.6 | 1000 |
| Switzerland | litamiga.epfl.ch | 128.178.151.32 | 300 |
| Germany | kelly.uni-paderborn.de | 131.234.128.206 | ALL |
| Germany | ftp.uni-paderborn.de | 131.234.2.42 | ALL |
| Germany | ftp.uni-erlangen.de | 131.188.3.2 | 7000 |
| Germany | ftp.uni-oldenburg.de | 134.106.40.9 | 2500 |
| Germany | ftp.uni-kl.de | 131.246.9.95 | 1500 |
| Germany | ftp.uni-stuttgart.de | 129.69.18.15 | 4500 |
| Germany | ftp.uni-siegen.de | 141.99.128.1 | 1500 |
| Germany | ftp.cs.tu-berlin.de | 130.149.17.7 | 4000 |
| Germany | ftp.stud.fh-heilbronn.de | 141.7.1.41 | 600 |
| Germany | ftp.tu-chemnitz.de | 192.108.33.193 | 4000 |
| Germany | ftp.rz.uni-wuerzburg.de | 132.187.1.2 | 700 |
| UK | ftp.doc.ic.ac.uk | 155.198.1.40 | ALL |
| UK | micros.hensa.ac.uk | 148.88.8.84 | 8500 |

GOPHER SITES TO VISIT

| | | |
|-------------|----------------------|---------------------------------------|
| USA (MO) | ftp.wustl.edu | 1/pub/aminet/info/goph |
| USA (TX) | ftp.etsu.edu | 1/AmigaArchives/Aminet |
| SWITZERLAND | ftp.eunet.ch | 1/pub/aminet/info/goph |
| GERMANY | ftp.uni-paderborn.de | 1/Service/FTP/Direct/ftp-server/amine |
| UK | ftp.doc.ic.ac.uk | 1/pub/aminet/info/goph |

mirror ALL of the files that the main wuarchive site generates, so the listing below includes details of how many files you could expect to find at the mirror you ftp over to.

Gopher (more on this great little utility in future issues) can also be used to access a few Aminet sites. For those that haven't used Gopher yet, just type "gopher <sitename>" or "gopher -p <start-

point> <sitename>" from your Internet provider's shell. Providing your provider's site has Gopher set up, you should be away!

So there you go. The above list should give you a few sites to try. Remember though that Aminet members are not the only FTP sites that provide Amiga files to anonymous users. There are literally dozens of others around, with new ones popping up all the time.



An excellent way to source info on other Amiga sites is to read and write in Internet Amiga newsgroups. Post questions and read what others have to say about their favorite FTP sites. Many of these other sites carry files which never end up on Aminet, so it pays to explore.

Email/Newsgroups

From the questions I've received over the last couple of months, it's become obvious that there's some confusion about the difference between Internet NewsGroups and Email. Here's a simple explanation.

NewsGroups can be likened to Fidonet echo conferences. When you post in a newsgroup, it's normally not to any particular person; if it is, you should make your post with the knowledge that anyone and everyone that reads that newsgroup will be able to read what you wrote and reply to it if they so desire.

NewsGroups also have specific topics. There are hundreds of different topics - just about any topic you can think of is covered by a newsgroup on the Internet.

Email, on the other hand, is person to person. It can be likened to Fidonet private Netmail. When you send email, normally only the person you address your email message to will read it.

Security

But don't get lulled into a false sense of security. Even though Email is person to person direct, your mail must pass through a number of systems in order to reach its destination. Because of this, it can also be quite easily intercepted and read by one of those system administrators.

The chances of this happening are pretty slim, but it IS perfectly possible, so don't make a habit of

sending highly confidential information via Email. If you need to send something VERY confidential, use some type of encryption like PGP (Pretty Good Privacy), which will jumble your message so that it can't be decoded and read unless whoever wants to read it has your own personal PGP key to decode it with. More on PGP and how to use it in future issues.

Sending Internet Email

To send Internet Email, you first need to know the Internet address of the person you want to send mail to. You'll usually find this information in the Sigs at the bottom of NewsGroup messages or in the FROM: field at the top of the message. Once you know a person's Email address, the rest is quite easy.

For example, my own Internet email address is

aleniart@insane.apana.org.au

To send me email, you would first enter the your access provider's Email message editor; the most common ones are PINE and ELM. I'll use elm in this example.

Step 1. Type elm from your Internet UNIX shell and the elm message editor should pop up.

Step 2. Now press M to mail a message. You will be prompted for a destination address. Here is where you enter the internet Email address of the person you're writing to. If writing to me, then enter "aleniart@insane.apana.org.au" and press return.

Step 3. You'll next be prompted for a Subject. This is where you enter a short description of what the message is about - for example "Your fantastic Online Columns".

Step 4. You'll then be asked if

you want copies of the message sent to anyone else. Answer no if you don't or put in another email address if you do and press return.

Step 5. You should then be presented with the editing screen. This is where you write your message. Once done, hold down your CTRL key and press X.

Step 6. Elm will then give you the option of (s)ending the message, (r)e-editing the message or (f)orgetting it.

Step 7. Once you've pressed S to save and send, elm will save your message and send it off to its destination. If all is well on the net at the time, then regardless of where you are posting from or where the recipient of your message resides, it should appear in his mail box a few minutes later.

Not all that hard, is it? If you find you are having problems, try accessing the built in help functions by typing "?" at elm's main menu screen for general explanations. If all else fails, page your system administrator and ask for help.

That's about all I have space for this month. Next issue, we'll take a look at how to FTP files using FtpMail, to cut out the waiting time while your files trickle down the line to your service provider's machine. Look forward to that and more.

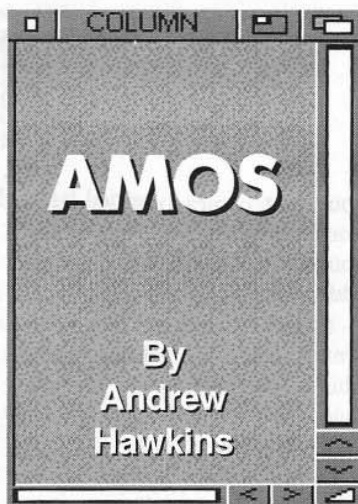


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Making the most of AMOS 3D - part 3

>Welcome back. This month's column deals with adding object collision, enabling the radar, creating a landscape and introducing waves. Let's get straight into it. Figure 1.0 (p43) is a screen grab from this month's routines in action. All this could be yours! First, you need to let the enemy tank roam freely.

As we left it, the tank could only move left and right of the player and a bit into the distance. To add challenge we want to move the tank freely around the player. We also need to account for range. If the tank moves too far away, and it will in the early waves due to its lack of aggression, we need to stop it. Look at figure 2.0 for a schematic of restricting the enemy.

The circular area represents how far the tank can move. We should range test 100000 VLU's from the player's position so the enemy is never more than 100000 VLU's in any direction. To do this, allow the tank full freedom, and give any tank access to the future class rules we must modify the existing MOVE_TANK procedure.

Remove these lines - they are the old range restrictions

```
If OX>-30000 and OX<30000
If OZ>1000 and OZ<50000
Td Forward 1,100
Pop Proc
End If
End If
```

Modify the code to look like this... (Note - if a line's been wrapped to the next one, there's a ♦ to indicate it.):

```
Procedure MOVE_TANK
Add MEM1,1,1 To _TANKS+1
If _KILL_TANK(MEM1)>0
♦or MEM1>_TANKS Then Pop
♦Proc
OX(MEM1)=Td Position
♦X(MEM1)
OZ(MEM1)=Td Position
♦Z(MEM1)
OB(MEM1)=Td Attitude
♦B(MEM1)
End Proc
```

Go to the top of the program and change...

```
Global _KILL_TANK
to
Global _KILL_TANK()
```

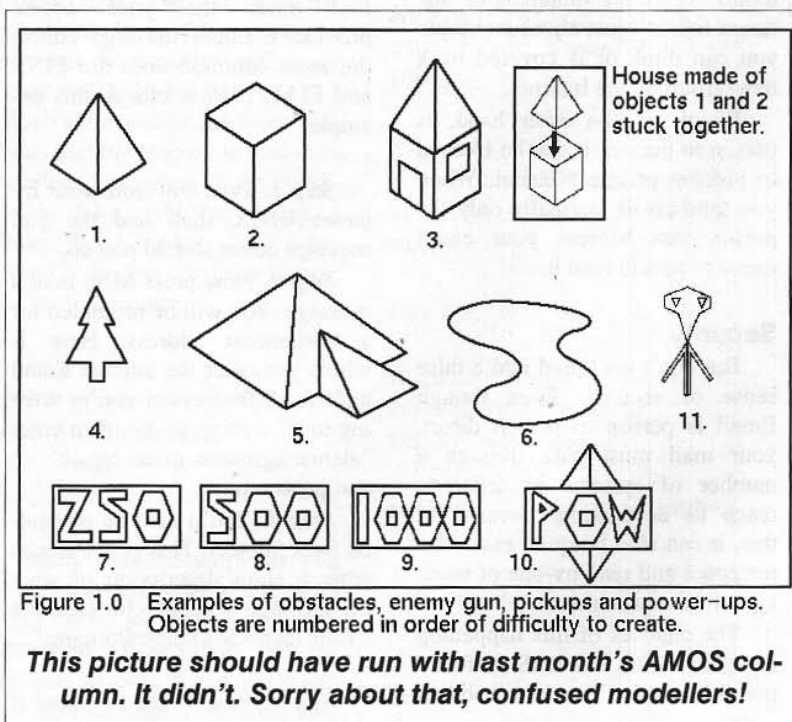
and include in the DIM statements
Dim _KILL_TANK(30)

Make sure all your DIM statements are above the GLOBAL statements, for legibility.

The first line cycles the variable MEM1 through the number of tanks created. This is a speed strategy. The theory is that if you only process one tank per cycle the cycle takes less time to complete. You won't notice the difference, because each tank responds 3/10ths of a second after the last. The next line aborts the procedure if the tank is dying or if the MEM1 variable exceeds the tank limit. This is intentional, and it's a cueing system. After the tanks are processed the terrain is updated, ad infinitum.

The next lines store the tank position and attitude into variables OX(), OZ() and OB(). The variables are now part of an array, because all the tanks are the same at a register level.

Again we're chopping and changing, but it's the nature of the learning process; as you come across new techniques you should



Procedure RADAR

```

If A$="z" or TERRAIN_CHK=10
  Cls 0,130,201 To 190,256 : Ink 1 : Circle 160,228,17
  Draw 158,226 To 150,220 : Draw 162,226 To 170,220
  Gr Writing 0 : Text 130,252,"X"+Str$(_ ZOOM/500)
  Screen Copy Logic(0),130,201,190,256 To Physic(0),130,201
End If
For P=1 To _ TANKS
  If OBJ_ CLASS(P)=1
    XP1=ER_ RX(P)+160 : XP2=ER_ RY(P)+228
    Clip 130,201 To 190,256
    Plot XP1,XP2,0 : BEAR=((Td Bearing B(0,P)-BM)/182)
    RAD=Td Bearing R : AL=(RAD/_ ZOOM) : BL=(RAD/_ ZOOM)
    IL=BEAR : CL=((IL/8)+1)*25 : XRL=-(AL*Sin(CL))
    YL=-(BL*Cos(CL)) : ER_ RX(P)=XRL : ER_ RY(P)=YL
    XP1=ER_ RX(P)+160 : XP2=ER_ RY(P)+228 : Plot XP1,XP2,1
  End If
Next P
' plot player
Plot 160,228,1
Screen Copy Logic(0),130,201,190,256 To Physic(0),130,201
Clip 0,0 To 320,256
End Proc
Go into the procedure MOVE_ PLAYER and type in at the top...
A$=Inkey$
If A$="z"
  Add _ ZOOM,500,500 to 5000
End If

```

Listing 1

their class definition in OBJ_ CLASS(). The next few lines erase the old tank pixel and update the bearing from the player to the current tank. The next few lines calculate how to show the tank with a circle plotting algorithm, and then the player's position is plotted and the radar copied to both screens.

The lines of code added to the MOVE_ PLAYER procedure allow the player to cycle through several zoom levels. A\$ is global so it can be read by any procedure.

Save and run. Pressing Z changes zoom and the X scale. Spin your tank around and the enemy tank will rotate into the radar spokes, and into view.

What you need to do now is create some tactics for the tank to adopt to add challenge to the game. Take a look at Figure 3.0 for a plan of tactics - I'll only cover the first two tactics this month.

Tactic one is done by comparing the tank's facing direction to the bearing from that tank to the player. If the two aren't the same, the tank should rotate to eventually face the player. At this point the second tactic, firing at the player, will be possible.

What I am describing are class definitions. If you look at the class rules, only some classes can fire or face the player (tanks and gun mounts). We need to account for different rules for all objects in the domain. After the firing routine in the MAIN loop, type in the procedure call CLASS_ CHECK. Now type in the following procedure:

(See Listing 2)

Note: from this point on, if you try to run the program or test it you will get many errors, because there are missing procedures.

This last procedure works by checking all objects for their class and activating certain rules applicable to the class. This includes manipulation or ABLE in orienta-

abandon the old code in favour of a better program. Enough pep talk.

Now save the program. If you run it now the tank will just spin, because it has no move instructions. Before fixing this, let's get the radar working so we can track the tank when it moves.

Type in the following variable declarations at the top of the program...

```

Dim ER_ RX(30),ER_ RY(30)
Global ER_ RX(),ER_ RY(),_
◆◆ZOOM,_ DO_ RADAR,A$

```

In the MAIN loop after the procedure call GROUND, type in...

```

Add _ DO_ RADAR,1,0 To 4
If _ DO_ RADAR=0 or (A$="z")
◆◆or MEM1>_ TANKS
  RADAR
End If

```

Now go to the bottom of your code and type in the following...

(See Listing 1)

Turbo 1.75 owners should note that Plot and Circle can be replaced with their Turbo equivalents for more speed.

The first lines check to see if the player has pressed the zoom key or if the terrain is about to be updated. If so, the radar is refreshed. The Screen Copy command copies the radar from the hidden screen to the visible one, because the Td Cls command in the MAIN loop only erases to line 200, for speed. The scoring box needs to be updated only occasionally, and changes to it needn't be erased every cycle.

The next lines create a loop to check all tanks, and double check that they're tanks by looking at

Listing 2

```

Procedure CLASS_CHECK
  For P=1 To _TANKS
    OBB=OBJ_CLASS(P)
    If OBB=1
      If _KILL_TANK(P)=0
        If CLASS(OBB,1)=1
          MOVE[P]
        End If
        If CLASS(OBB,2)=1
          ABLE[P]
        End If
        If CLASS(OBB,3)=1
          _FIRE[P]
        End If
        If CLASS(OBB,4)=1
          KOLLISIONS[P]
        End If
        If CLASS(OBB,8)=1
          ROUND[P]
        End If
      Else
        If CLASS(OBB,4)=1
          KOLLISIONS[P]
        End If
      End If
    End If
  Next P
  For P=10 To 14
    OBB=OBJ_CLASS(P)
    If OBB<>1
      If _KILL_TANK(P)=0
        If CLASS(OBB,1)=1
          MOVE[P]
        End If
        If CLASS(OBB,2)<>0
          ABLE[P]
        End If
        If CLASS(OBB,3)=1
          If _FIRE_OK(P)=0
            _FIRE_OK(P)=-1
          End If
          _FIRE[P]
        End If
        If CLASS(OBB,4)=1
          KOLLISIONS[P]
        End If
        If CLASS(OBB,8)=1
          ROUND[P]
        End If
      Else
        If CLASS(OBB,4)=1
          KOLLISIONS[P]
        End If
      End If
    End If
  Next P
End Proc

```

Listing 3

```

Procedure _FIRE[OBJ1]
  If _FIRE_OK(OBJ1)=-1 and Rnd(10)<=CLASS(OBJ_
♦♦CLASS(OBJ1),7)
    For Q=1 To 3
      If BULL(Q)=0
        BULL(Q)=1 : SHOT(Q)=OBJ1 : _FIRE_OK(OBJ1)=1
        Td Object _TANKS+Q,"bullet", OX(OBJ1),0,OZ(OBJ1),
♦♦0,OB(OBJ1),0
        Td Face _TANKS+Q,0 : Td Forward _TANKS+Q,800

        OXM=Td Position X(_TANKS+Q)-OX(OBJ1)
        OZM=Td Position Z(_TANKS+Q)-OZ(OBJ1)
        Td Forward _TANKS+Q,-800
        Td Move X _TANKS+Q," (1,"+Str$(OXM)+"",10)"
        Td Move Z _TANKS+Q," (1,"+Str$(OZM)+"",10)"
        Shoot : Goto EX_SHOOT
      End If
    Next Q
    EX_SHOOT:
  End If
  For Q=1 To 3
    If BULL(Q)>0
      Inc BULL(Q)
      For R=10 To 14
        If SHOT(Q)<>R
          RANGE=999999 : _TD_RANGE[_TANKS+Q,R,1]
          If RANGE<CLASS(OBJ_CLASS(R),5)
            BULL(Q)=0 : _FIRE_OK(SHOT(Q))=0
            Bell : Add OBJ_DAM(R),-EN_GUN_DAM
            If OBJ_DAM(R)<=0
              _KILL_TANK(R)=1
            End If
            Td Kill _TANKS+Q
            Goto EX_OBJ
          End If
        End If
      Next R
    EX_OBJ:
    If BULL(Q)>15
      _FIRE_OK(SHOT(Q))=0
      BULL(Q)=0
      Td Kill _TANKS+Q
    End If
    If BULL(Q)>0
      RANGE=999999
      _TD_RANGE[_TANKS+Q,0,3]
      If RANGE<800 and INVULN<=0
        Boom : Add DAM,-EN_GUN_DAM
        _FIRE_OK(SHOT(Q))=0
        BULL(Q)=0
        Td Kill _TANKS+Q
      End If
    End If
  Next Q
End Proc

```




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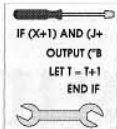
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PROGRAMMING

tion terms, MOVE, TARGET which means you can fire on the object, FIRE which means the object can fire back, KOLLISION, and the MASS, INtelligence, DA-Mage and ROUND class rules.

Save the program. Now this class-check procedure is in place we must include all the procedures it calls. Let's start with the fire procedure.

There are two classes of objects that can fire; the TANK and the GUN TURRET. The GUN TURRET is able to fire all around instantly, but the tank is different. It is feasible to make a hybrid class, say a jeep, that moves like a tank but can fire all around instantly; next month!

The variable `_ FIRE_ OK(MEM1)` decides whether the tank can fire. When the tank is facing the player this is changed to -1. This expression will be found in the `MOVE[x]` procedure, to be written later.

Type in the following procedure: (See Listing 3)

The first line checks the variable `_ FIRE_ OK(MEM1)` is set to -1 (ie. the tank is facing the player) and that the tank is aggressive enough to fire, based on the object's class definition. There are three bullets allocated for the enemy to use, as the next line sets up a loop to check all 3. Next we check to see if a bullet is free (`BULL(q)=0`), and if so toggle the `BULL(q)` variable to 1. `SHOT(q)` records which object is firing the bullet and this is to tell the tank that fired that it can fire again when the bullet has expired. `_ FIRE_ OK(obj1)` is toggled to 1, so that the tank can't shoot anymore.

Next the bullet object is created at the tank's position and bearing. The following lines of code create a move instruction for the bullet so that from this point it will move

Listing 4

```

Procedure MOVE[OBJ1]
  If _ DO_RADAR=4
    If Rnd(10) <= CLASS(OBJ1,7)
      If SPD(OBJ1) <= OBJ_SPD(OBJ1)
        Add SPD(OBJ1), 30
      End If
      SET_MOVE[OBJ1]
    Else
      If SPD(OBJ1) > 0
        Add SPD(OBJ1), -10
      End If
      If SPD(OBJ1) < 0
        SPD(OBJ1)=0
      End If
      SET_MOVE[OBJ1]
    End If
  If Rnd(10) <= CLASS(OBJ1,7)
    BEAR=Td Bearing B(OBJ1,0)/182
    If BEAR < 0
      BEAR=360+BEAR
    End If
    ATT=OB(OBJ1)/182 : _ FIRE_OK(OBJ1)=0
    If _ ATT>BEAR
      TEST=Abs(_ ATT-BEAR)
    Else
      TEST=Abs(BEAR-_ ATT)
    End If
    If TEST>OBJ_TRN(OBJ1)
      FIRE_OK(OBJ1)=0
      If _ ATT>180 and BEAR=>180
        If _ ATT>BEAR
          TURN=-OBJ_TRN(OBJ1)
        Else
          TURN=OBJ_TRN(OBJ1)
        End If
      End If
      If _ ATT>180 and BEAR>180
        If _ ATT-180>BEAR
          TURN=OBJ_TRN(OBJ1)
        Else
          TURN=-OBJ_TRN(OBJ1)
        End If
      End If
      If _ ATT<180 and BEAR<180
        If _ ATT>BEAR
          TURN=-OBJ_TRN(OBJ1)
        Else
          TURN=OBJ_TRN(OBJ1)
        End If
      End If
      If _ ATT<180 and BEAR=>180
        If BEAR-180>_ ATT
          TURN=-OBJ_TRN(OBJ1)
        Else
          TURN=OBJ_TRN(OBJ1)
        End If
      End If
      If _ ATT>BEAR
        TRN_SPD_DELAY=Abs(_ ATT-BEAR)/(1+OBJ_TRN(OBJ1))
      Else
        TRN_SPD_DELAY=Abs(BEAR-_ ATT)/(1+OBJ_TRN(OBJ1))
      End If
      Td Angle B OBJ1,"(1,"+Str$(TURN*182)+"", "+Str$(TRN_
      ••SPD_DELAY)+")"
    Else
      If _ FIRE_OK(OBJ1) <> 1
        _ FIRE_OK(OBJ1)=-1
      End If
      Td Angle B OBJ1,"(0,0,0)"
    End If
  End If
End If
End Proc

```


under interrupt (a speed strategy). It works by moving the bullet forward and comparing its new position to its original position, thereby coming up with a move size (OXM and OZM) which is transferred into the TD MOVE X and Z strings.

Next a sound effect is initialised, and the bullet loop is aborted. This avoids generating more than one bullet per cycle - yes, another speed strategy.

The next loop is a maintenance loop that checks all existing bullets. Firstly the BULL(q) variable is INC'd. Next the terrain objects are checked, to see if the bullet hits them, and if so, the bullet is terminated and the terrain object suitably damaged. It is this small routine that enables the player to hide behind objects. Within this routine the range of the bullet is checked with the terrain object's size, defined by CLASS(OBJ_ CLASS(r),5)). The bullet variable is toggled to off (BULL(q)=0) and the tank that fired the bullet is allowed to fire again if possible (_ FIRE_ OK(SHOT(q))=0). A BELL is sounded, so that the player knows a tank is nearby, and hitting obstacles, and the obstacle is damaged, (Add OBJ_ DAM(r), -EN_ GUN_ DAM). If the obstacle's damage is reduced to zero it is time to blow it up, and its _ KILL_ TANK(r) variable is toggled to 1.

Later, the program will detect this in the KOLLISION procedure and blow the object up properly. Then the bullet object is terminated. You will notice that from here it jumps to EX_ OBJ. Although it's really bad practice to use GOTOS in programming, because it makes bugs hard to find, it does stop the program from wasting time on the next few routines that do range testing and expiry.

If the bullet hasn't hit anything

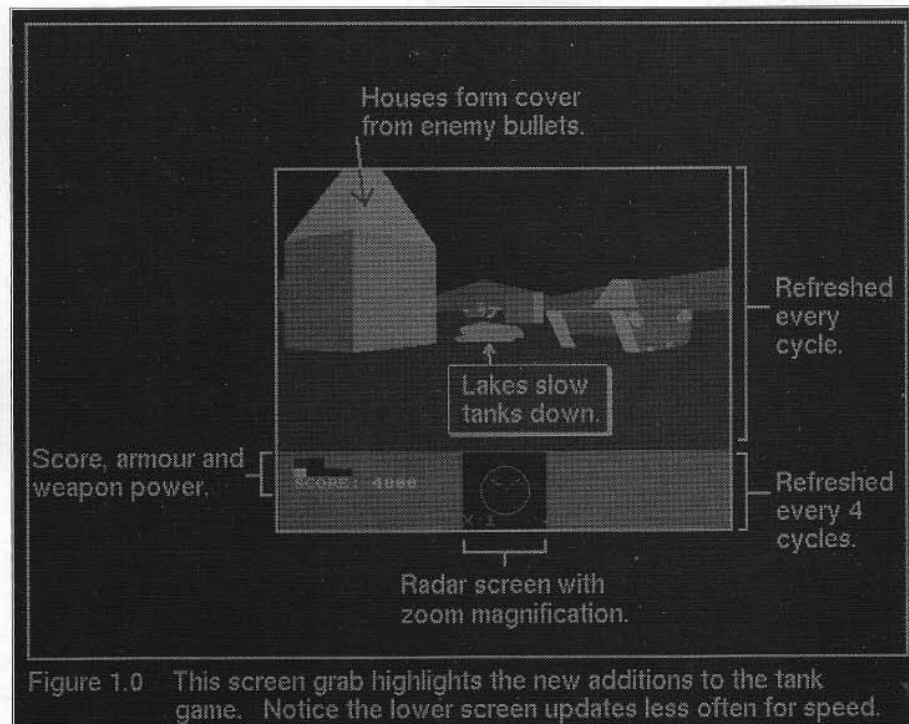


Figure 1.0 This screen grab highlights the new additions to the tank game. Notice the lower screen updates less often for speed.

so far, it checks the range to the player. You will notice the INVULN variable. This is for later when we introduce power-ups. If the bullet is in range with the player, the player is damaged, the bullet terminated, and the tank that fired is allowed to fire once more. The next routine checks to see if the bullet has expired - flown too far to be any use. If so the bullet is killed, and the tank is allowed to fire again.

Save the program, but you still won't be able to run it; be patient. The next procedure is the MOVEclass. The tank is the only object that can access it, until next month anyway.

Type in the following procedure...(See Listing 4)

The first thing this procedure does is check the _DO_RADAR variable. This means every four cycles it changes the movement of a tank. It's just a cueing system that stops the tank from constantly

flipping left and right and gives the impression that the tank is dedicated to a particular move, much like a human would be. The next routine tests the tank's aggression (CLASS(OBJ1,7)) to decide whether to speed up some more, assuming the tank hasn't reached full speed. It ADD's more speed and calls the SET_ MOVE procedure, to reflect the change. If, however the tank is not aggressive enough, then the next routine automatically slows the tank down, and reflects the change with the call to the SET_ MOVE procedure.

The following routine firstly checks the tank's aggression to proceed with the move tactic, and then tests the bearing to the player. The next four or five lines convert the Td Bearing values to the Attitude function, making them conversant. Basically, Td Bearing/182 returns a value of -180 to 180 and Td Attitude/182 returns a value of 0 to 359. Once the values are conversant, the next routines decide

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Clockwiser is an unashamed puzzler. You have to rotate rectangles of blocks to make one side of the screen match the other - sounds simple, doesn't it? Floppy based versions contain 110 puzzles; you get 250 on the CD-based versions. There's also a puzzle editor, so you can create your own. Like all the classics, it's easy to start but hard to stop.

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Procedure KOLLISIONS[OBJ1]

```
MEM2=OBJ1
If BULLET>0 and _ KILL_ TANK(MEM2)=0
    RANGE=999999
    _ TD_ RANGE[20, MEM2, 1]
    If RANGE<500+CLASS(OBJ_ CLASS(MEM2), 5)
        Boom : Add OBJ_ DAM(MEM2), -GUN_ DAM
        If OBJ_ DAM(MEM2)<=0
            _ KILL_ TANK(MEM2)=1
        End If
        BULLET=0
        Td Kill 20 : Pop Proc
    End If
End If
If _ KILL_ TANK(MEM2)=1
    Boom
    Td Move Z MEM2, "(0,0,0)"
    Td Move X MEM2, "(0,0,0)"
    Td Move Y MEM2, "(1,100,5) (1,50,5) (1,-20,3) (1,-50,3) (1,-150,5)"
    Td Angle A MEM2, "(1,1000,25)"
    Td Angle B MEM2, "(1,500,25)"
    Inc _ KILL_ TANK(MEM2) : Goto EX_ KILL
End If
If _ KILL_ TANK(MEM2)>1
    Inc _ KILL_ TANK(MEM2)
    If _ KILL_ TANK(MEM2)>25
        Boom : Td Kill MEM2
        Add SCORE, CLASS(OBJ_ CLASS(MEM2), 5)
        If OBJ_ CLASS(MEM2)=1
            Dec YIELD
            If YIELD<1
                GAME=2
            End If
        End If
        _ KILL_ TANK(MEM2)=0
        If OBJ_ CLASS(MEM2)=1
            Td Object MEM2, "tank", XM+3000-Rnd-(6000), 0, ZM+3000+Rnd(6000), 0, 0, 0
        Else
            OBJ_ CLASS(MEM2)=0
            GENERATE_ TERRAIN[MEM2]
        End If
        If OBJ_ CLASS(MEM2)<>0
            Td Move Y MEM2, "(0,0,0)"
            Td Angle A MEM2, "(0,0,0)"
            Td Angle B MEM2, "(0,0,0)"
            OBJ_ DAM(MEM2)=CLASS(OBJ_ CLASS(MEM2), 6)
        End If
    End If
End If
EX_ KILL:
End Proc
```

Listing 5

DICE 3.0

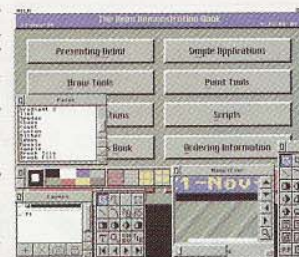
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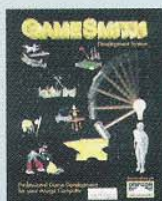


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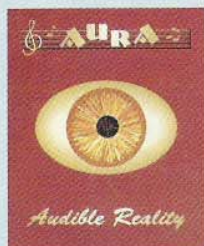
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Listing 6

```

Procedure ROUND[OBJ1]
  Td Angle OBJ1,0,BM,0
End Proc
Procedure SET_MOVE[OBJ1]
  OX(OBJ1)=Td Position X(OBJ1) : OZ(OBJ1)=Td
  Position Z(OBJ1)
  Td Forward OBJ1,SPD(OBJ1) : DIFFX=Td Position
  X(OBJ1)-OX(OBJ1)
  DIFFZ=Td Position Z(OBJ1)-OZ(OBJ1) : Td
  Move OBJ1,OX(OBJ1),0,OZ(OBJ1)
  Td Move X OBJ1,"(1,"+Str$(DIFFX)+"",1)L"
  Td Move Z OBJ1,"(1,"+Str$(DIFFZ)+"",1)L"
End Proc

```

Listing 7

```

Procedure ABLE[MEM3]
  If OBJ_CLASS(MEM3)<>1
    RANGE=999999
    TD_RANGE[0,MEM3,0]
    If RANGE<CLASS(OBJ_CLASS(MEM3),5)
      If CLASS(OBJ_CLASS(MEM3),9)=1
        Td Angle MEM3,0,BM,0 : Td Forward
  MEM3,SPEED*3
      OX(MEM3)=Td Position X(MEM3) :
  OZ(MEM3)=Td Position Z(MEM3)
      OB(MEM3)=BM : Add SPEED,-(CLASS(OBJ_
  CLASS(MEM3),5)/500)*10
      Else
        If CLASS(OBJ_CLASS(MEM3),2)=-1
          SPEED=10
        Else
          SPEED=0 : Td Forward 0,-(CLASS(OBJ_
  CLASS(MEM3),5)/500)*10
          End If
        End If
      End If
    End If
  If OBJ_CLASS(MEM3)=1
    For MEM4=10 To 14
      RANGE=999999 : TD_RANGE[MEM3,MEM4,1]
      If RANGE<CLASS(OBJ_CLASS(MEM4),5)
        If CLASS(OBJ_CLASS(MEM4),9)=1
          Td Angle MEM4,0,OB(MEM4),0 : Td
  Forward MEM4,SPD(MEM3)*2
          OX(MEM4)=Td Position X(MEM4) :
  OZ(MEM4)=Td Position Z(MEM4)
          OB(MEM4)=OB(MEM3)
          Add SPD(MEM3),-(CLASS(OBJ_
  CLASS(MEM4),5)/CLASS(OBJ_CLASS(MEM3),5))*10
          Else
            Td Forward MEM3,-SPD(MEM3) :
  SPD(MEM3)=0
          End If
          Bell
          End If
          If SPD(MEM4)<0
            SPD(MEM4)=0
          End If
          If SPD(MEM4)>OBJ_SPD(MEM4)
            SPD(MEM4)=OBJ_SPD(MEM4)
          End If
          Next MEM4
        End If
      End Proc

```

Listing 8

```

Procedure SCORE
  If OLD_SCORE=-1
    Td Cls : TXT$="WAVE"+Str$(WVE)
    Ink 2 : Text 128,138,TXT$ : Ink 9 : Text
  120,130,TXT$
    Ink 2 : Text 122,132,TXT$ : Ink 8 : Text
  121,131,TXT$
    TXT$="TARGETS"+Str$(YIELD) : Ink 2 : Text
  128,168,TXT$
    Ink 9 : Text 120,160, TXT$ : Ink 2 : Text
  122,162,TXT$
    Ink 8 : Text 121,161, TXT$ : Screen Copy
  Logic(0) To Physic(0)
    Wait 30
    XX:
    A$=Inkey$ : If Joy(1)=0 and(A$="") : Goto XX
  End If
    Clear Key
  End If
  If DAM<0 : DAM=0 : End If
  Ink 0 : CC=PLY*190 : Bar 10+CC,205 To 31+CC,211
  Ink 3 : Bar 10+CC,205 To 11+CC+DAM,211
  Ink 0 : Bar 10+CC,212 To 51+CC,217
  Ink 2 : Bar 10+CC,212 To 11+CC+(GUN_DAM/2),217
  Gr Writing 1 : Ink 1 : Text
  10+CC,225,"SCORE:" +Str$(99999999)
  Ink 2 : Text 10+CC, 225,"SCORE:"+Str$(SCORE)
  Gr Writing 0
  Screen Copy Logic(0), 10+CC,205,120+CC,240 To
  Physic(0),10+CC,205
  OLD_DAM=DAM : OLD_SCORE=SCORE
  If DAM<1 : Td Cls : TXT$="GAME OVER" : Ink 2 :
  Text 128,138,TXT$
  Ink 9 : Text 120,130,TXT$ : Ink 2 : Text
  122,132,TXT$
  Ink 8 : Text 121,131,TXT$ : GAME=1
  Screen Copy Logic(0) To Physic(0)
  Play 1,5 : Play 1,5 : Play 1,5 : Play 10,5
  Wait 50
  XX1:
  A$=Inkey$ : If Joy(1)=0 and(A$="") : Goto XX1
  End If
    Clear Key
  End If
  If GAME=2
    Td Cls : TXT$="WAVE COMPLETE" : Ink 2 : Text
  128,138,TXT$
    Ink 9 : Text 120,130,TXT$ : Ink 2 : Text
  122,132,TXT$
    Ink 8 : Text 121,131,TXT$ : Screen Copy
  Logic(0) To Physic(0)
    Play 30,2 : Play 30,2 : Play 35,10 : Wait 50
    XX2:
    A$=Inkey$ : If Joy(1)=0 and(A$="") : Goto XX2
  End If
    Clear Key
  End If
End Proc
Procedure _END_ROUTINE
  If GAME<>0
    For P=1 To 14
      If OBJ_CLASS(P)<>0
        Td Kill P
        OBJ_CLASS(P)=0
      End If
    Next P
    For P=1 To 3
      If BULL(P)<>0
        BULL(P)=0
        Td Kill P+_TANKS
      End If
    Next P
  End If
End Proc

```


which way is the shortest angle to face the player and the speed in which to turn. From there the tank's attitude is changed with the Td Angle B string, which will rotate the tank on interrupt; yep, another speed strategy. The Else routine signifies that the tank is basically facing the player and toggles the _FIRE_OK(obj1) variable so the tank can fire.

Save the program. By the way, you have been making backups, haven't you?

The next procedure already exists. Delete the procedure call in the MAIN loop to KOLLISIONS and modify the KOLLISIONS procedure code to look like the following segment. The main change is to the variables themselves, converting them to arrays, and the use of MEM2 to check all the objects in the game domain using the same routine. Note especially the line Procedure KOLLISIONS[OBJ1]. The inclusion of the square brackets is very important.

(See Listing 5)

Save the program and NO, you can't run it just yet. The next two procedures are very short, but necessary nonetheless. The ROUND procedure rotates the object to always face the player - useful for trees and circles, as well the gun turret. The SET_MOVE procedure sets up a movement string to move any object under interrupt, such as the tank. The jeeps, humans and smart missiles will use this procedure in the future.

(See Listing 6)

I'll have to be brief about the next few procedures because I'm running out of space. The ABLE procedure detects collisions between objects and moves them around based on mass. So it is possible to move the cubes and pyra-

mids around with your tank by nudging them. This is a useful technique to charge a tank while under cover. Objects of greater mass such as the lake, trees, mountains and houses will stop you dead, though you can shimmy your way inside them for better protection. The tanks can manipulate objects in the same way. Type away!

(See Listing 7)

The next procedure is the front and back end for the waves and the score update procedure. Score, bullet power and health will only be updated if they've changed - a speed strategy. There is also provision to signify the beginning of the wave, game over and the end of the wave. The END_ROUTINE procedure kills everything and resets variables for the next wave.

(See Listing 8)

Save the program. Almost there. Some house keeping to do. Open INITIALISE procedure and look for...

```
Td Object
♦♦P,"tank",0,0,50000,0,0,0
and change it to...
Td Object
♦♦P,"tank",XM+(3000-
♦♦Rnd(6000)),0,ZM+(3000-
♦♦Rnd(6000)),0,0,0
```

After the Shared OBJ\$ at the top of the INITIALISE procedure type in...

```
Screen Open
1,960,300,4,Lowres
Cls 0 : Screen Hide 1
♦♦:Screen 1
Ink 2 : Draw 0,100 To
♦♦960,100
Plot 0,100 : Draw To
♦♦10,90
For P=2 To 20
Draw To P*48,(98-
♦♦Rnd(30))
Next P
Ink 3 : Paint 0,102
```

Listing 9

```
Randomize Timer
WVE=-1
RE_START:
INITIALISE
MAIN:
GAME=0
OLD_SCORE=-1
SCORE
Comp Test Off : rem speed increase
for 3D when compiled
Repeat
Td Cls
Comp Test On : rem check
♦♦keyboard etc.
MOVE_PLAYER
Comp Test Off : rem speed
♦♦increase when compiled
If _DO_RADAR<>0
MOVE_TANK
End If
CLASS_CHECK
FIRING_ROUTINE
If _DO_RADAR<>0
TERRAIN_MANAGER
End If
Td Redraw
BACKGROUND : rem this is new
♦♦procedure to hand the mountains
GROUND
If OLD_DAM<>DAM or OLD_
♦♦SCORE<>SCORE
SCORE
End If
Add _DO_RADAR,1,0 To 4
If _DO_RADAR=0 or (A$="z") or
♦♦MEM1>_TANKS
RADAR
End If
Screen Swap
Wait Vbl
Until GAME<>0
Comp Test On
END_ROUTINE
If GAME=1
WVE=0
SCORE=0
Goto RE_START
End If
If GAME=2
Goto RE_START
End If
End
```


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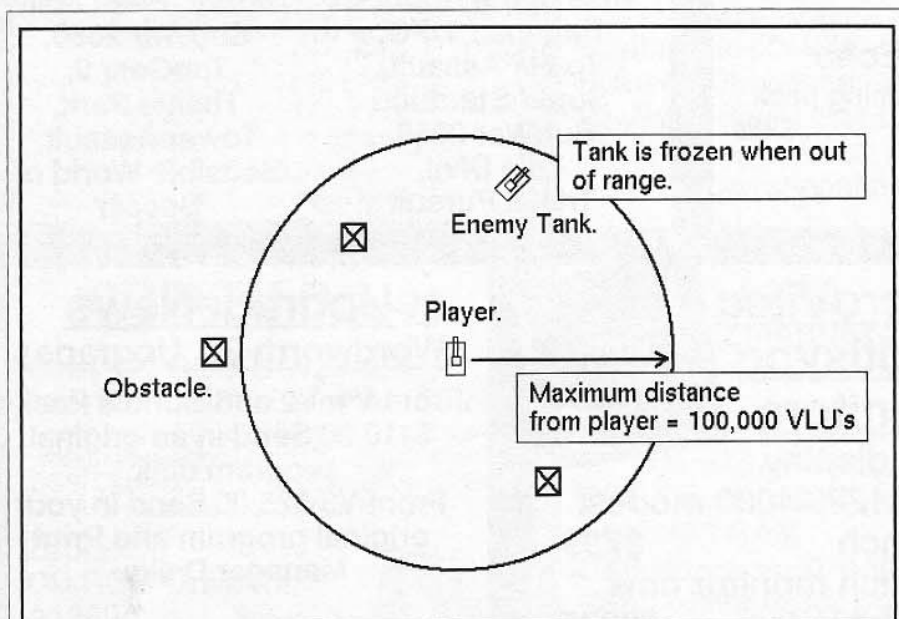


Figure 2.0 To stop the tank from getting too far away from the player, the tank is immobilised when more than 100,000 VLU's away. It keeps the game manageable, and less frustrating.

Ink 2 : Paint 10,99

This creates the mountains in the background.

Then after the Screen Open 0,320,256,16,Lowres command type in...

Screen 0
Flash Off

Look for YIELD=(WVE/3) further down the procedure, it should be changed to..

YIELD=3+(WVE/3)

This means that by default you have to shoot 3 tanks for the first wave and every three waves you have to shoot 1 extra.

There's a spelling mistake in the Global definitions; change "Global YEILD" to "Global YIELD".

Open the _TD_RANGE{} procedure, go down to the line that starts with...

If MDE=3

and check to make sure that the following lines are the same:

CNST3=XM

CNST4=ZM

They probably are, but I had to make sure.

Now check your MAIN code with the following and update where applicable, bearing in mind that most instructions exists, but the position of new instructions relative to old ones is important.

** Make sure the Td Angle Rel command in the MAIN loop is erased.

(See Listing 9)

Nearly there. Type in the following code. It just handles the mountains as a background to give depth. You will notice the VW_MODE variable. This will handle future VR view modes.

Procedure BKGROUND

If VW_MODE=4

V1=100

Else

AA=Td Attitude A(0)

If AA>180*182

```
V1=Abs((360*182)-AA)/40
Else
V1=0
End If
End If
V2=BM/105
Td Background
1,V2,V1,V2+320,V1+200
To 0,0
End Proc
```

Save and, yes, RUN THE PROGRAM. The first thing that is bound to happen is that you'll get about 10 syntax errors. It's an expected result of typing in so much code without testing it. My apologies. Check and double check your code with that in this magazine. Be particularly critical of equations, brackets, variable names and definitions. Once you've got it bug free, save and run it.

You'll know if you're being shot because your health will drop. Bullets will be destroyed if they hit an obstacle, making cover possible. You can push the pyramids and cubes around, making it possible to form a barricade, and you can destroy most objects, except for hills and swamps, which slow you down. About wave 4-6, gun turrets will appear fire when you get close. Each wave ends when you destroy the number of tanks given at the beginning, and each wave increases in difficulty.

Next month I'll show you how to spruce up the graphics and add jeeps, super-tanks, smart missiles and troopers, a hi-score table, sound effects and music. I'll also include a VR view-change system. Any problems so far? Write in to Amiga Review and they'll forward your comments to me. You are out there, aren't you? Please respond, AMOS 3D users - you do exist... you have to exist...

□



Internet Special

Cool Surfing Spots

By Daniel Rutter

There are a number of nifty ways to waste time, and if that is your mission the Internet-linked personal computer is the world's best tool for the purpose. Entertaining, brain-stimulating, almost totally sedentary and practically infinite in its variety; the Internet is definitely my idea of a good time.

It's also of course changing the course of human existence blah blah transcending traditional media blah blah humanity as a group mind blah, but never mind the philosophy - what's in it for you?

I am not an Internet expert. I've been doing computer communications for a few years now, but only in the last few weeks have I ventured out of the warm, friendly shallows of FidoNet - the Internet's smaller, slower, easier to deal with cousin.

Sure, the Internet always looked really hip, cool and groovy - but who wanted to negotiate a connection contract with some organisation more used to dealing with Computer Science students, then snarf up a load of cruffy UNIX-ported baroquely hairy software with obscure acronymic

names and waste a month setting it all up? If any of the adjectives in that previous sentence confused you, you definitely wouldn't have been up to the task either.

And after you'd driven yourself half-mad getting the account, you'd find yourself confronting a UNIX prompt. If you can work a command line you won't find UNIX too threatening, but most people find UNIX-bashing too much like hard work, and personally I'm inclined to agree, now that the Net's seeing the light and going all hypertext.

Of late, getting Internet-linked has become no more complex than hooking up to CompuServe, as long as you're not looking for the path of least expense. My personal faceplant into the information swamp came with the arrival of a review copy of AUSNet's \$9.95 newsagent-sold access software, a cutdown but perfectly functional, for personal use, subset of the full Chameleon package from NetManage. AUSNet's billed as Australia's largest commercial Internet provider, and hooking up couldn't be simpler. Their fees are good, too; a flat \$40 per month, which gives you two hours a day to surf

and a 40Mb monthly download limit. When your time expires, you can elect to automatically log off or pay another \$10 peak or \$5 off peak an hour, and \$1 per megabyte, to keep going. The only company with a simpler connection strategy is Magnadata, that doesn't charge for time at all and charges \$40 a month for 20Mb downloads, with \$2 a megabyte after that. You can dial Ausnet locally from all capital cities, though; Magnadata's for Sydneysiders.

Ausnet's Internet connection is straight to the States - you're not patching into the groaning Australian AARNet link (which Magnadata and many others use). This means you generally get pretty snappy response, though you've got to remember that this is the Net, and nothing's guaranteed.


Point and click around the Net

Hypertext is the chief distinguishing feature of the most rapidly growing (tripling in size every MONTH, if you can believe that) aspect of the Internet, the World Wide Web. If you've got an IP capable connection (Jargon



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WHAT'S NEW IS GOLD !!!
SUBSCRIBER SERVICES|HELP ?

Buster at the end of the article, folks) and a Web browsing package (you can get these for DOS, but you really need a graphical user interface like Windows in order to access the Web's true beauty) then you can wander out through the ever-growing expanse of the Web.

Using the World Wide Web requires little typing - it's mainly point and click. Lots and lots of people with data they want to make accessible have been making hypertext documents (using a format called HTML) and interlinking them. Thus, while perusing a file at a Los Alamos site, did I stumble across a reference to "gigabytes of data". The word "data" was blue, which meant I could click it and see a reference; I did, and was suddenly looking at a biography of Brent Spiner, the actor who plays the part of Commander Data on Star Trek: The Next Generation. The biography was physically located on a computer at Cal Tech. Following further links took me to the imposing collection of Star Trek files located at various NASA sites (where else?).

This cross-referencing makes the World Wide Web quite simply the coolest encyclopedia-browsing experience you can ever have, and given its incredible rate of propagation through the more boring Net, I'll be talking about the Web in this occasional column. If you've only got a shell account, don't get used to it.

As an example of the Web's coolness, come with me on a typical net-surf. Surfing is actually quite a good analogy for Internet access, since the point of surfing is to enjoy the movement, not to get anywhere in particular. Finding a particular, obscure piece of information on the Net can be annoying, but it's great fun to cruise around and see the sites, and you'll collect all sorts of useful and useless data on the way.

I started out by peeking into the Los Alamos E-Print Archives on <http://xxx.lanl.gov/>. I'd read about his site in Scientific American - it's a repository for lots of otherwise unpublished scientific papers, and it gives scientists a way to get

their research out without waiting for the year or so it takes to get published in one of the conventional journals, whose circulations are dropping and subscription prices rising as more and more libraries decide they can't afford the sub and just get the journal from elsewhere by inter-library loan.

The problem with the E-Print Archives at the moment is that they're not screened well enough - just about anybody can put his paper there without the usual peer review system to make sure he's making sense. Moves are afoot to set such a system up. But hey, it's cool to be thumbing through the contents of a computer in a town which until comparatively recently wasn't even on the maps. On the downside, the papers are all written in mind-bendingly obscure jargon, which is after all what you'd expect from quantum cosmologists and high energy physicists.

Naturally, Los Alamos' continuing US Government bang-bang connections meant it had links to the Pentagon - so off I went. Having ascertained that it's not actually possible to see anything very much at the Pentagon site (which is rather badly maintained...), I took another link to the US Army Research Lab info server - <http://info.arl.army.mil/>. Here you will find much data on the ARL Scientific Visualisation operation - computer graphics to do with high-tech killing hardware. They're all pretty boring, not to mention somewhat creepy, so I abandoned my peeking at Big Brother and decided to do some searching.

World Wide Web searching is very cool. There are a number of search programs - Lycos, the World Wide Web Worm and many others - all of which work from a regularly updated database of many, many, many URLs. My favourite is Lycos.

When you do a Lycos search,



Welcome to the WEB Personals! This semi-moderated free service is intended for people who want to meet others for romance, companionship, or other activities. You can now include your [photo](#) in your ad for

Now over 3000 different visitors (100K hits) each day!

Now with 2 new ad categories: Pen Pals & College Town!



Read Ads



Search

you type the words you want to search for into a box (you can select various searching options and the command syntax can be as complex as you like...), and the system rips off through its monster URL database and comes back with those entries which it feels best fit your request. The more of your search words it finds and the higher up in the document they are, the better.

Robot hunting

I started off looking for robots - real ones, if possible. There's a site at a US Military establishment that purports to allow you to lob snowballs into a room by clicking a button, but all it really does is grab a picture of the room via a camera and draw a white circle on it somewhere - there's a register of best hits and a lot of associated silliness, to, but I wanted a real remote-controlled robot (Want to find the site? Consider it an exercise - do a Lycos search for "snowball"!).

I eventually found my goal, at <http://www.usc.edu/cgi-bin/>. I got there via HotWired magazine, one of the hippest places to be on the Internet and located at <http://www.hotwired.com/>. HotWired, the ad-enhanced offshoot of the original Wired magazine, contains lots of Net info and

lots of conventional magazine-stuff, from the serious to the frivolous. Keep up with Wired and you'll be able to hold your own in any dinner party cyber-talk.

Anyway, getting back to the robot I found, it's a simple swinging arm with two height settings, a black and white digitising camera and a compressed air blower. The arm's set over a gravel pit full of interesting objects, and you can move the thing about for five minutes (after passing a basic test and waiting in the queue), look at the [pit and blow air to uncover things. It's rather like an abstract, pointless version of the old fairground lucky dip machines, but it's the concept that's interesting - here's a genuine mechanical object of no small complexity, physically locat-

ed at the University of Southern California and being controlled in real time by you on the other side of the globe. Well, I was impressed.

Where's the porn?

One of the hot media topics with regard to the Net is pornography. You don't have to be 18 to get an Internet account, and there's absolutely no identity checking, so little Jimmy can collect lots of digitised smut, right?

Well, not really. I looked quite hard for online porn and actually found very little.

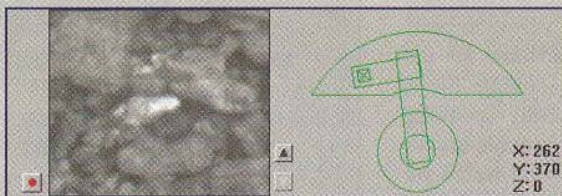
You see, naughty stuff is a perfect idiot attractor. Make public the fact that you've got lots of dirty pictures at your site and a horde of sex-starved propellorheads will descend upon it and clog it solid. And if it should emerge that some of the people accessing your pics, movies, text files or whatever were underage, or that any of the material contravened the obscenity laws of wherever your accessors happened to be, anywhere in the world - welcome to Toastville, population: you.

Legal debate on the status of online data and the prosecutability of its purveyors continues, but most sites have simply decided to leave well enough alone and kill

OPERATOR'S SCREEN

You are Currently Operating the Robot

ENERGY LEVEL ■ ■ ■ ■ ■ ■ ■ ■ ■ ■



X: 262
Y: 370
Z: 0




QUIT Your Turn at Operating the Robot




OBSERVATION AREA

CURRENT OPERATOR - Scott Fitchet

ENERGY LEVEL 
 You Must UPDATE to Track the Robot's Progress

 X: 269
 Y: 362
 Z: 0

 Registered Operator Login

off their dirty areas. There are still places you can find naughty pics - even hard core stuff - but they're not publicised, and many are now password protected.

Shock! Horror!

Let's face it - if it's possible for you to be offended, there'll be something on the Net that'll offend you. It is, by definition, uncensored and anarchic, which is good in a freedom of speech sense but bad in a propagation of unhealthy ideas sense. And if you're offended, there's nobody you can complain to and nobody to seek compensation for your mental trauma from. On the other hand, online offensiveness doesn't jump out and bite you. There are no online flashers or lurking pornbrokers, waiting to prey on innocent passers-by. Since the Net has a place for every oddity you can name, there's a place for everyone. As long as they do their thing in the appropriate spot, and don't pollute alt.sex.bondage with horticultural discussions or vice versa, nobody minds. You have to look for the weird stuff. Now, looking for it isn't hard, but generally speaking you're not going to stumble across anything outrageous by accident. Remember the joke about the old lady who complained that she was

offended by the naked man in the flat across the road, who was only visible from the waist up - "But if you stand on the table, you can see EVERYTHING!"

Valentine hunting

Since there didn't seem to be many pictures of naked women around, I decided to take the more traditional route and check out the Personals at <http://netmedia.com/date/>. This lists all the desperate and dateless netsurfers, so I tried my luck by doing a search for women in Australia seeking men.

There weren't any.

The nearest prospect was in New Jersey.

Oh well.

Net Roulette

Abandoning my search for on-line romance and deciding to stick a pin into the metaphorical phone book, I headed for URouLette at http://kuhttp.cc.ukans.edu.cwis.organizations/nhucia/uroulette/uroulette_text.html. After you've typed all this into your Go: box or zapped to the site via a link from elsewhere, you get the opportunity to blast off for any, randomly selected URL on the Web. You may get something cool, you may get something boring, you may get an error because the URL you selected isn't there any more.

In fact, an error is what I got the first time I clicked the button - no matter, go back and try again and zap! Suddenly I was staring at a schematic of some university's particle accelerator. I took this second burst of high energy physics jargon as a good stepping-off point, and pried myself away from the net machine to start writing this story.

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**WWW - the WORLD WIDE WEB WORM**

Best of the Web '94 - Best Navigational Aid. Oliver McBryan

Last Run: Sept 5. Users: 2,000,000 per month.

[Introduction](#), [Definitions](#), [Search Examples](#), [Failures](#), [Register a Resource](#), [WWW Paper](#)

1. Search only in Titles of citing documents
 2. Search only in Names of citing documents
 3. Search all Citation Hypertext
 Select: 4. Search all Names of Cited URL's

Keywords:



PGP - Pretty Good Privacy is, for domestic purposes, a completely reliable encryption system. There's no guarantee the FBI or MI6 couldn't break the code, but nobody less elevated has a hope. The way PGP works is quite simple. Everybody who want to use it has a private key and a public key. The public key you let everybody know about; anyone who wants to send you an encrypted message can use this public key to encrypt it. PGP's encryption algorithm, however, is very difficult to reverse unless you have the right private key. So the theory is that only the authorised recipient can use something that's PGP encrypted.

IP - This is the method by which Internet data is exchanged. If you've got an IP connection to the Internet, the Net's talking straight to your computer. If you don't (i.e. if you have a lousy shell account), the Net's talking to the computer you're dialling in to and you're just looking at a terminal screen.

HTML - Hypertext Markup Language. This is the format used by World Wide Web pages. If you decide to save a page, you'll end up with an HTML file - on MS-DOS compatible machines, such files have a .HTM suffix. HTML files are viewable in conventional word processors and text editors, but all the neat formatting and pictures are gone. Instead, you see the raw formatting codes (cryptic acronyms inside < > brackets). Actually grabbing whole files for off-line reference can be annoying, because frequently a given "file" is actually a cluster of interlinked pages, and in order to have the full thing on your home machine you have to grab every page individually. There are robots that can work their way through a whole document and grab all the links, but they can also go berserk with deeply cross referenced systems and try to grab the entire Web. This is a Bad Thing.

Robots - Frequently abbreviated "bots", a robot is any program which, without human intervention, heads out onto the net and collects stuff can be called a robot. A sexier, more marketable name is "intelligent agent", but it doesn't really apply yet because all the robots are still pretty stupid.

In the future, it's said, intelligent agents will be able to browse the by then unimaginably vast Net, find the kinds of things your interested in knowing about and bring them to your attention. Your own personal automatically delivered combination news service, reference library and entertainment system. Cool.

URL - Uniform Resource Locator. This is the core of the World Wide Web; every text, picture, animation, sound or other file on the Web has a URL designator, of the form `http://< something>`. All hypertext link buttons point to some URL or other, but they don't check to see if that URL is still there; many URLs don't exist any more.

Hypertext - A groovy way of presenting cross-referenced text. The most common sort of hypertext that most people have encountered is the Windows help file - you view one page of text at a time, and keywords are a different colour. When you click on a keyword, it takes you to the relevant section.

Home page - If you've got a permanent net account (we're generally talking about service providers and uni students here), you can have a home page. which is what people see if they decide to look at you through a World Wide Web browser. Your home page can contain anything you like. Companys' home pages typically have links to information on their products, company history and so on; any number of ordinary people also have home pages, typically featuring a potted autobiography, a picture or two, and anything else they want the world to know. A personal home page is the best value vanity publishing yet invented.

Internet Special

Internet Issues

By Daniel Rutter

► It seems everyone's hopping on the predictive bandwagon when it comes to the Internet, so who am I to buck the flow? There's no doubt that the increasing interconnection of computer systems and their users around the world, whether it be via the Internet-as-propellorheads-know-it or some other network, will change the structure of the developed world, perhaps a great deal; so what's going to happen?

Editing the past

Anyone who's read Orwell's "1984" will have a reasonably good grasp of the concept of changing the past. Who cares what really happened - it's what you persuade people happened that matters. Even as it stands today, Internet news services, online magazines and other areas have many thousands - millions even - of files which are regularly updated.

Now, there's nothing wrong with that; bringing information continuously up to date is obviously good. But when does correction become revisionism? What if the corporation which sponsors a given online service pressures the ser-

vice to "correct" a news piece on environmental degradation to downplay the importance of the corporation's contribution?

Orwell had the vast Ministry of Truth, full of wretched lackeys manually updating Big Brother's official definition of reality; the modern Net's capable of far more efficient operation, cutting out the human factor after the original determination of the line to be taken.

Extrapolating from the current system of "mirror" sites and automated updating, all you'll have to do in an integrated future global info-net is change the master copy of a given file, and the change will propagate automatically across the world. And when the public looks at the file, it finds that its memory must have been faulty, because it says right here that weekly chocolate rations are at their highest ever, and industrial output's at an all-time peak...

Of course, it doesn't have to be as bad as that. At the moment, the Net's heartening anarchic self-regulation precludes any organised direction of its activity. There's still very little outright dishonesty, and massive peer review of anything and everything that's said.

But with the various incursions of big corporations and their mania for bureaucratic organisation of the peaceful information jungle, things could change.

Garbage In, Gospel Out

It's been said that computers allow you to make mistakes thousands of times faster than you could unaided. Networked computers make it possible for you to propagate these mistakes thousands of times faster, too. Imagine a reporter's story on an earthquake contains a typo. Instead of saying 1,000 people died with damage estimated at ten million dollars, he says ten million people died with damage estimated at \$1,000.

A subeditor looks at the story and sees only the money value as being odd, and checks back, and finds out that the real damage estimate is ten million bucks. Reassured, he puts the story on the networked "newswire", where thousands of papers around the globe grab it and treat it as gospel - bingo; the biggest natural disaster of modern times!

Sure, it'd likely be fixed up before anybody made major policy decisions or seized the chance to



invade, but the purpose of news is to inform the public and if we're going to have international net-news feeds, we also need more stringent testing of the information they deliver.

So far there haven't been any real disasters traceable to human error, but as more and more people come to depend on the Net for superfast information without putting on a brake of serious proofreading, it's only a matter of time. But hey - if you get the news before the other guy, who care's if it's true?

Environmental pollution

The trouble with the Internet is that all those sites you access for free actually belong to somebody, and are generally meant to be doing something useful. You, J. Random Netsurfer, are a freeloader.

This means that you get the fishing spot syndrome; if one angler finds a really good fishing spot, he should keep his mouth shut about it. Tell the world and the place'll be overrun, ruining it for everyone.

Likewise, if somebody publicises a site with the very latest supercool Things You Gotta Have, a zillion hopeful nerds will immediately descend upon it like locusts, bogging it down and causing the owners to try to make their home less attractive to cyber-hoboes. The nicest way they can do this is to restrict the number of people accessing the machine at once, which can be OK if you're patient and they're not too draconian about it, or can suck if they decide to set the limit to 10. If they decide to go to more serious exclusion, they'll do it by simply disallowing connections from people from a particular group of addresses - nobody with .com on the end of their address gets in, for example.

Of course, this doesn't stop the non-clueless from simply address-hopping until they find a place

from which they can enter the banned area, but it blocks the newbies effectively.

The most ferocious way of getting people off a clogged site is to simply make the attractive stuff unavailable. This is done either via passwords or, more commonly, by simply killing off all the cool stuff. Since the things you want to play with are often not related to the official function of the site (military sites with Blues Brothers pictures on 'em?), the sysadmins have no trouble at all removing them.

One thing for users with a little knowledge to avoid doing is running an "unintelligent agent" campaign - sending a robotic browser out to a given site. What these critters do is methodically trace every hypertext link they find, and whack the resulting page onto your hard drive. Then off they go, tracing all the links from that page, and so on. The trouble with this is that it only works on small systems with no links to other places - and there are very few of those left. The densely cross-referenced nature of the Net today means that a dumb robot will try to suck down the whole Net, and annoy all systems through which it passes. You can apply more finesse to a robot search, but you'll still irritate the site owners as you leech out lots of data you probably don't need and slow their site down.

The result of a robo-search of many sites can be a rapid cancellation of your account.

Eat at Joe's!

Advertising on the Internet was originally regarded as a cardinal sin. The whole idea of the Net as it spread from its military/academic roots was free, not-for-profit exchange of information. If somebody used info they got from the Net to make money, fair enough, but using the Net as your money-making engine was Not On.

Nowadays, despite continuing opposition, many businesses have established themselves as online service providers, with attractive World Wide Web pages and up to date info on all their products. There's even embryonic advertising in Net publications - the most obvious example is Wired magazine's online incarnation, which has strip ads on its Web pages which typically feature a nifty logo and teaser line; click the ad and you're looking at the relevant company's home page.

Of course, advertising is only half of the deal. You have to be able to get the punters to buy, too. And until recently that's been awkward on the Net.

There are a number of problems with conducting commercial transactions on the Net. Obviously, you can't send cash via E-mail, and the insecurity of Net mail means sending your credit card number is financial suicide. Private mail is quite unlikely to be read by anyone other than its intended recipient, simply because there's so much of it and most of it is very boring for anyone other than those involved. But if you announce you're accepting credit card numbers via E-mail, approximately one trillion hackers who want Rolexes and Ferraris will be reading your mail very quickly indeed.

There are encryption systems for making E-mail far more secure - PGP, for instance - but given the amount of money you can make from a good credit card scam, there's still a strong incentive to find A Better Way.

The most popular system for online shopping is still just including a toll free number in your ad, for punters to call - but clicking a button's so much more conducive to those lovely impulse buys.

Thus far, there have been two attempts to make commercial transactions work on the Net. The



first has been floated by an organisation called First Virtual, (the First National Bank of the Internet...). You tell them your name, email address, Visa or Mastercard number, account identifier and password. You do NOT do this in an Email message, but over the phone or by mail. Setting up the account costs \$US2.

Your details are then stored on a machine that's not even connected to the Internet, and the number is never sent to anybody else.

First Virtual tell you your account identifier, which is based on the one you suggested but with an extra bit added to make it harder to guess.

When you want to buy something on the Net you simply quote your account identifier and grab the data. The seller sends the identifier and the amount they want to charge to First Virtual, and First Virtual sends you email asking you if the transaction was successful.

If you answer yes it means you got the info and it was what you wanted, and First Virtual debits your credit card and credits the account of the provider. If you say no it means you didn't get it, or already had it, or it wasn't what you wanted, and no debit is made. If you say "fraud", it means you didn't ask for anything, and, again, you pay nothing.

You can use First Virtual for ftp (using the username fvftp and entering your identifier as the password), reading charged WWW pages, subscribing to mailing lists, or doing anything else that somebody wants to charge you for.

On the face of it, it seems First Virtual makes it rather easy to pass bad virtual cheques, but this isn't really a problem. For a start, the sums of money involved for information sales aren't very big - nobody's going to lose their house over a two dollar data fee. And First Virtual builds a profile of

customers and dealers who get a bad reputation.

To see more stuff on First Virtual, look at <http://www.infohaus.fv.com/>.

The other attempt at online transactions is rather more elegant. The NetBank has come up with a rather nifty system for online transactions, which works rather like ordinary cash. They call it, predictably, NetCash.

NetCash is, essentially, a banknote's serial number without the paper. You can get NetCash in denominations from 25 US cents to \$US100.

An actual NetCash "coupon" looks something like this:

NetCash US\$ 10.00
A123456B789012C

The coupons are created by the NetBank, and they're sent to you upon receipt of your cheque (you can fax them a cheque if you like - yes, that DOES work), and you can buy up to \$100 worth at a time.

Buying NetCash, or converting it back into US dollars attracts a two per cent fee. But NetCash can be circulated as much as you like before it's turned back into "real" money; transactions are free, only conversion costs.

The absence of transaction costs makes NetCash usable for very cheap items - reflected by the 25 cent minimum denomination.

When you buy something using NetCash, you simply send the coupon line to the merchant by email. The merchant then sends the coupon to the NetBank (netbank@agents.com) in a message that looks like this:

NetCash US\$ 10.00
E123456H789012W /Accept

and the NetBank will reply with a receipt message that contains a "fresh" coupon of the same value as the one just spent. The old one is now void and cannot be spent again.

You can manipulate your Net-

Cash in the same way. For example, sending a message that says:

NetCash US\$ 10.00
A123456B789012C /change 2
fives

will turn a \$10 NetCash coupon into two \$5s. You can likewise amalgamate coupons, create coupons for odd amounts or deposit coupons to your account. All of these clerical transactions are free.

NetCash is also quite fraud-proof. Since each coupon can only be spent once, there's little room for forgers.

NetCash is, however, about as stealable as ordinary cash. If somebody sees a coupon in your possession and spends or cashes it - tough. If you keep all of your coupons secret, the chances of a successful guess are tiny.

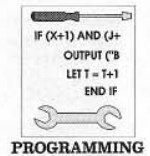
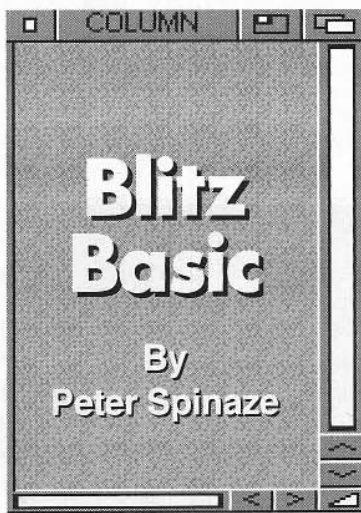
PGP is also supported for any NetCash transaction, including those with the NetBank, which gives even more security.

There are presently no account establishment fees or any other charges involved in starting up as a NetCash accepting merchant. Merchants can request cheques periodically, or automatically have a cheque sent when their account reaches a certain point - say, every \$US500. Or, of course, they can spend the NetCash themselves.

Contact the NetBank at help@agents.com for more information.

I don't endorse either of these services, because while they both sound rather clever they could also be devilish schemes to free people from the burden of unsightly excess cash. But the principle is good, and it's plain that the huge commercial pressure for online funds transfer will result in a widely accepted, easy to use system, which could be First Virtual's or the NetBank's, in the near future.

□



Control structures

>Welcome back to the Blitz column. Last month I looked at variables and variable types. This month I'll look at ways of controlling the flow of a program.

After a Blitz program has been compiled and run, the instructions are usually executed one after another from top to bottom. I say usually because there are many commands that change the normal top down flow. These commands are used to set up control structures, which are very useful in solving problems, and getting the work done.

First I'll look at some different types of loops. A loop is a section

of code which is repeated a number of times before moving on to the rest of the program. They are useful for doing repetitive work and saving time and space. Say you need to print out the numbers one to ten in a section of your code. The hard way to do it would be like this: *(Note - if a line's been wrapped to the next one, there's a ➡ to indicate it.):*

```
Nprint "1"
Nprint "2"
Nprint "3"
Nprint "4"
....
Nprint "10"
```

As you can see, this would take ten lines of code, and a fair while to type into the editor. Now have a look at this piece of code:

```
For t=1 to 10
  Nprint t
Next
```

That's only three lines of code, and does exactly the same job!

The loop we used in this example is called a For...Next loop, and as you might have guessed, the loop tells Blitz to execute the part contained in the loop ten times before continuing on.

The line "For t=1 to 10" sets up the loop and tells Blitz to count from one to ten, using the variable t as the counter. The "Next" command at the end of the loop adds one to the counter variable and checks to see if the variable t is higher than the upper value you set, in this case 10. If it isn't, it redirects traffic back to the start of the loop, otherwise control drops through to the next command after the Next command. The Nprint t instruction simply prints the value of t out to the screen.

Imagine the savings if you wanted to count to very high numbers, like a thousand or even a million! Three lines of code can count to any number you want. Before we leave the For...Next loop, there are a few extra details you should know about it. You can start or end on any number you want, and you can even tell Blitz how to count! Have a look at this example:

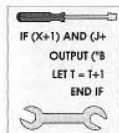
```
For t=10 to 100 Step 10
  Nprint t
next
```

The Step command tells Blitz to add the specified number to the counter variable each time it loops. In this example t increases by ten each loop, but you could count backwards by telling it to Step -10.

Notice how I've typed the instructions inside the loop a bit to the right? That makes it very clear exactly which bit of the code is being looped through, and also if you always indent two spaces when you start a new loop, you can line up the start and finish of each loop.

| RCAR Bubble sort example | | | | | | | | | | | | | | | |
|--------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 6 | 3 | 97 | 16 | 31 | 21 | 37 | 39 | 4 | 54 | 28 | 73 | 41 | 86 | 15 | 87 |
| 78 | 3 | 35 | 16 | 3 | 26 | 85 | 48 | 22 | 56 | 58 | 75 | 15 | 87 | 25 | 89 |
| 25 | 4 | 51 | 18 | 56 | 27 | 97 | 48 | 45 | 56 | 37 | 75 | 29 | 89 | 11 | 89 |
| 11 | 4 | 58 | 8 | 47 | 27 | 44 | 48 | 12 | 58 | 18 | 75 | 5 | 89 | 72 | 90 |
| 72 | 4 | 5 | 19 | 75 | 28 | 11 | 41 | 98 | 58 | 54 | 76 | 79 | 90 | 91 | 91 |
| 91 | 5 | 83 | 17 | 87 | 38 | 73 | 43 | 23 | 58 | 53 | 78 | 3 | 90 | 45 | 91 |
| 11 | 5 | 3 | 22 | 64 | 31 | 34 | 43 | 54 | 58 | 58 | 79 | 91 | 91 | 26 | 92 |
| 45 | 6 | 32 | 22 | 35 | 31 | 97 | 44 | 75 | 59 | 25 | 79 | 95 | 91 | 25 | 92 |
| 26 | 6 | 52 | 13 | 51 | 32 | 81 | 45 | 81 | 59 | 22 | 79 | 49 | 92 | 25 | 93 |
| 25 | 7 | 63 | 23 | 16 | 34 | 4 | 45 | 82 | 59 | 31 | 81 | 84 | 93 | 93 | 94 |
| 93 | 9 | 30 | 5 | 75 | 34 | 6 | 47 | 5 | 63 | 37 | 81 | 86 | 94 | 85 | 94 |
| 85 | 11 | 13 | 23 | 86 | 35 | 98 | 48 | 79 | 64 | 58 | 81 | 98 | 94 | 84 | 95 |
| 84 | 11 | 81 | 3 | 13 | 35 | 22 | 49 | 19 | 64 | 16 | 82 | 85 | 95 | 51 | 95 |
| 51 | 11 | 16 | 24 | 26 | 35 | 7 | 51 | 98 | 65 | 95 | 83 | 21 | 95 | 64 | 96 |
| 64 | 11 | 41 | 25 | 27 | 36 | 26 | 51 | 12 | 70 | 59 | 83 | 36 | 96 | 40 | 97 |
| 40 | 12 | 71 | 25 | 76 | 37 | 71 | 51 | 72 | 71 | 70 | 84 | 56 | 97 | 9 | 97 |
| 9 | 12 | 23 | 25 | 73 | 37 | 24 | 52 | 89 | 71 | 8 | 85 | 38 | 97 | 89 | 97 |
| 89 | 13 | 59 | 25 | 65 | 37 | 11 | 53 | 40 | 72 | 40 | 85 | 37 | 97 | 27 | 98 |
| 27 | 13 | 4 | 26 | 39 | 37 | 35 | 53 | 25 | 72 | 17 | 85 | 83 | 98 | 53 | 98 |
| 53 | 16 | 43 | 26 | 94 | 38 | 96 | 54 | 79 | 73 | 48 | 86 | 59 | 98 | | |

The output from the bubble sort program



PROGRAMMING

Nested loops

You can even be tricky and put a loop inside another loop, which is called "nesting loops". Here's an example of a For...Next loop nested inside another:

```
For x=1 to 10
  For y=1 to 5
    Nprint x*y
  Next
Next
```

The indenting makes the picture much clearer. If you follow the code through you can see that the inner For...Next loop will be executed ten times, and that the inner loop repeats five times. That means that fifty lines will be printed to the screen when you run this example.

Other loop types

If you can understand For...Next loops, you should have no trouble with the other loop types. Remember that all loops are similar in that they execute the instructions between the start and finish of the loop a number of times. Let's have a look at some other loops.

```
While Joyb(0)=0 ;
♦♦Wait for left mouse
♦♦button to be pushed
♦♦Wend
```

This is called a While...Wend loop, and it always takes the form:

```
While (condition)
  Loop code
Wend
```

While the condition is met, Blitz will keep executing everything in between the While and the Wend instructions. In the example, there was no code within the loop,

Loops make repetitive operations easy.

because the loop just checks for a press of the left mouse button, and we just want Blitz to twiddle its thumbs until the user has pressed the button.

A variation on the While...Wend loop is the Repeat...Until loop. It's much the same, but the important difference is that the check for the condition is done at the end of the loop. This means that the loop code is always executed once, even if the condition is false, whereas within a While...Wend, the loop code is only used if the test condition is true. Here's an example:

```
Repeat
Until joyb(0) <> 0 ;
♦♦Keep repeating until
♦♦left mouse key is
♦♦pushed
```

Here's a small example for you to type in and play with. It uses all of the skills we have just learnt this month. Remember, that the only way to learn is to experiment; you can't damage your computer,

so try everything and anything!

```
NPrint "Amiga Review
♦♦beginners' example"
NPrint ""
```

```
NPrint "Blitz can do
its seven times table!"
NPrint ""
```

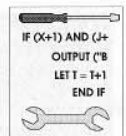
```
For t=1 To 12
  NPrint t," times
♦♦seven equals ",t*7
Next
```

```
NPrint ""
```

```
NPrint " Press the left
mouse key to exit."
```

```
While Joyb(0)=0
  VWait ;
♦♦Needed for good mul-
titasking
; leave out the vwait
and see!
Wend
```

```
End
```

PROGRAMMING

Your very own bubble sort

This month I've been playing with different methods of sorting numbers. It's a fairly common programming problem, and the need to sort data re-occurs time and time again. The inbuilt commands for sorting in Blitz are lousy; there's a Sort command for lists, but it's slow and often crashes, and I don't use many lists anyway!

If you have a look at any decent programming book, there are many, many different methods to sort data. This month I've written an entertaining program to visually display the Bubble Sort method in action.

A Bubble Sort is a general purpose algorithm, useful for most common sorting applications though abhorrent to any Real Programmers, and will make a useful addition to your bag of programming tricks. In this example, the data to be sorted is contained in a one dimensional array, as random numbers between one and 99.

The Bubble Sort method involves going from one end of the data to the other end, comparing an element with its neighbour, and swapping them if they are out of place. This means you can sort from either end, and sort either from highest to lowest or lowest to highest, depending on your need.

When you've gone through the data once, the "out of place" elements have been moved, but the data may not be sorted yet, depending on the mess that it was originally in. What you need to do is to keep repeating the sort until it goes all the way through without needing to swap numbers, that would mean the order is correct. A simple flag keeps track of that. here's the code:

```
DEFTYPE.1

Dim array(150) ;
♦♦array to hold numbers to
♦♦be sorted

Screen 0,11
Window
0,0,0,640,250,$1002,"ACAR
♦♦Bubble sort example",1,0

RRandomize Ticks ;
♦♦give me a true random
♦♦number seed

For t=0 To 140 ;
♦♦shuffle random numbers
♦♦into array
array(t)=RRnd(1,99)
WLocate t/20*90,(t MOD
20)*8
Print array(t)

Next

WColour 2,0
; *** BUBBLE SORT

Repeat

fin=0

For t=0 To 139
If array(t)>array(t+1)
Exchange array(t),
♦♦array(t+1)
fin=1
End If

WLocate t/20*90+40,(t
♦♦MOD 20)*8
Print array(t)," "

Next

Until fin=0

; ***

MouseWait

CloseWindow 0
CloseScreen 0

End
```

The code starts by dimensioning the data array, and then opening an Intuition screen and window, then it seeds the random number generator.

The first For...Next loop puts random numbers into the array, and prints the unsorted data to the screen in nice, pretty columns.

The Repeat..Until loop is the actual Bubble Sort routine, and we are using the variable fin as the sort finished flag. As you can see, the Bubble Sort is called repeatedly until fin tells us the data is all sorted into its correct order.

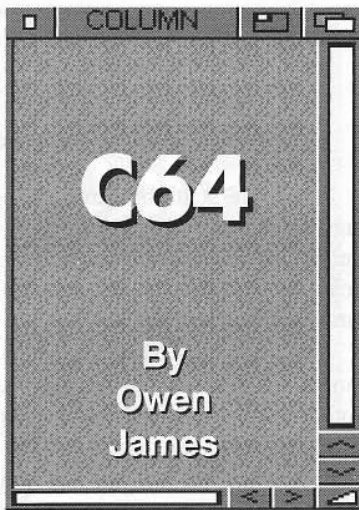
While the sort is happening, we print the contents of array next to its unsorted values, so you can watch the algorithm in action. This slows it down somewhat, but makes for entertaining and educational viewing. To feel the real speed and power of the Bubble Sort (Real Programmers may now slap their thighs and guffaw), comment out the printing lines. Quick, eh?

As you may have worked out by now, the bubble sort is most powerful when used on data that is mostly in good order. It's excellent when you have just added a few new numbers to an already sorted list, since it takes very few cycles to ripple the new numbers into position.

For this month's homework tutorial, I want you to examine methods of making the sort quicker and more efficient. For example, do you really need to go from one end of the data to the other each time?

Back next month with some more beginners and advanced stuff. Until then, as always, BLITZ ON DUDES!





► Soon to be released for GEOS is a new utility allowing users to send and receive faxes with the aid of a fax modem. Software for performing this feat has for long been available for PCs, Amigas and Macs, but this is the first time it's come out for the Commodore 64/128. An 80 column GEOS-128 version will be released later in the year. GeoFax will be distributed by CMD, and will cost around \$US40.00. A demonstration version is already available. Watch this space for further details.

LoadStar, the ever-popular US disk magazine for the C64 and 128, now has an official Australian/New Zealand distributor. JDB Software's John Buckingham advises that subscriptions are now being accepted, and prices have now been greatly reduced for Australian subscribers. The new rate is \$120.00 (Australian) for a twelve month subscription. Also available are single issues, three month, six month and two year subscriptions.

Until the end of March, all new subscribers will have the chance to receive their disks for free for a year. All subscribers will go into the draw and the winner will have the sub price refunded. Free issues are also available as an incentive for helping friends to sign up.

For more information, contact JDB Software by writing to PO Box 244, Warilla NSW 2528 or calling (042) 97 3159.

On the subject of magazines,

word recently arrived here that the British magazine Commodore Format, one of the last remaining C64/128 magazines, has ceased selling subscriptions and will not be published in 1996.

CMD has just released geoCable II. The original geoCable was an adaptor for the user port of the C64 which allowed you to connect standard printers with parallel ports. GeoCable II performs the same task, but also has a passthrough port.

64Net V1.80 is now available. 64Net is a software/hardware combination which allows C64 users to access the logical drives of a PC. With it, you can connect your 64 to any PC to access hard drives, floppy drives and CD-ROMs to both read and write data. It's certainly a cheap alternative to adding a hard drive to your C64; an old XT with a working hard drive should set you back no more than \$100. In Australia, 64Net is available from Russell Alphey for \$75.00. For more information, contact Russell by telephoning (03) 427 8558 or (03) 651 3057, or via the Internet r.alphey@dce.vic.gov.au.

Code One now has limited copies of CAD-Pak 64 for \$49.95, Mini Office II for \$29.95, and Shoot 'Em Up Construction Kit (cassette only) for \$19.95. Several copies of the Graphics Book for the C64 for \$29.95 are also available. To order, telephone (047) 57 3982 or send a cheque/money order/credit card details to PO Box 192, Katoomba NSW 2780. Postage is free on these items, but quantities are limited.

C64 and the Internet

Continuing the series on using a C64 on the Internet, this month let's look at using Anonymous FTP services.

FTP is short for File Transfer Protocol. This is used for transfer-

ring files around the net. Many sites allow "anonymous FTP", whereby files may be accessed without a pre-established user account. To access a site this way, type FTP sitename at your prompt. When asked for a Login ID, simply type anonymous.

Once connected, use the LS command to get a directory listing. The files you want will probably be stored in the PUB (public) directory. Few sites carry C64/128 files, but there are still some.

For starters, FTP to tol-sun.oulu.fi. In the pub/C64 drawer you'll find a small but useful selection of C64 files, including archivers, ML monitors, and other utilities. Once you find a file you'd like, type "get filename". After a few seconds, the file will be transferred to your host computers' drive. Log out of ftp with the quit command, and in your own home directory, if it all went as planned, you'll find the requested file. Getting it onto your machine will require "rx filename".

There are many sites opening and closing every day, and even more changing the types of files they offer. For a detailed list of current C64 FTP sites, send mail to 72560.3467@compuserve.com.

More on using a C64 with the Internet next month.

Mail

Marc Walters of Edgecliff writes:

Dear Owen, I still read your C64 column every ACAR, and it is only for this reason that I still buy the mag. Even though I also own an Amiga, ACAR really doesn't suit my needs. Anyway, this letter is just to express my encouragement and thanks for keeping the C64 Column going in ACAR all these years.

I must say that the loss of Spiteri's adventure column was a shock. If any column was going to

survive ACAR's revamp I'd have laid my bets on that one.

Korella Trading of Belmont NSW still has a few brand new Xetec Super Graphix printer interfaces. Korella also has hundreds of C64 titles and recently obtained a number of good C128 and Plus4 programs. I don't work for Korella, but I thought they deserved a plug.

I recently got to play with a Flash-8 accelerator. It was amazing to watch programs eight times faster. When I finally managed to get it to work with GEOS it was even more fun! The Flash-8 is a very, very impressive piece of hardware.

I recently read in an American C64 publication how the Amiga mail section of one large BBS was filled with discussions on what Workbench-style interfaces were available on MS-DOS machines, as large numbers of American Amiga users were ditching their Amigas for PCs but still wanted Workbench. The writer of the article pointed out how us C64 users have survived for years without any help from Commodore - perhaps the American Amigans could learn something about tenacity and dedication from us. It still amazes me how such an aged and low-powered computer can command such a dedicated user base.

Thanks for the info, Marc. The 64's popularity, while diminishing, still amazes many. Just look in the CBM echo and the comp.sys.cbm newsgroup to see just how many users are still dedicated.

That wraps up another edition of The C64 Column. As usual, feel free to drop me a line. Send your questions, comments, and suggestions to me care of The C64 Column, PO Box 288, Gladesville NSW 2111 or via Fido Netmail to 3:713.888.999, or the Internet via oj@code1.dialix.oz.au.

□

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Wordworth 3.1

It's the right decade

By Andrew Farrell

► It must be the decade of version 3.1. When you get to 3.1, you've made the big time. Print 3.1 on the box, and you have an instant seller, a license to print money and apply for a gold Amex card. You don't believe me? Hey, could all those millions of Windows 3.1 users possibly be wrong?

PC users switched to Windows 3.1 by the masses at the start of the nineties. At the start of '95, Workbench 3.1 arrived - the version that everyone can use. And Wordworth 3.1? Well, it's faster, more reliable and has new features. And so far, I have not made it bomb once.

What's new?

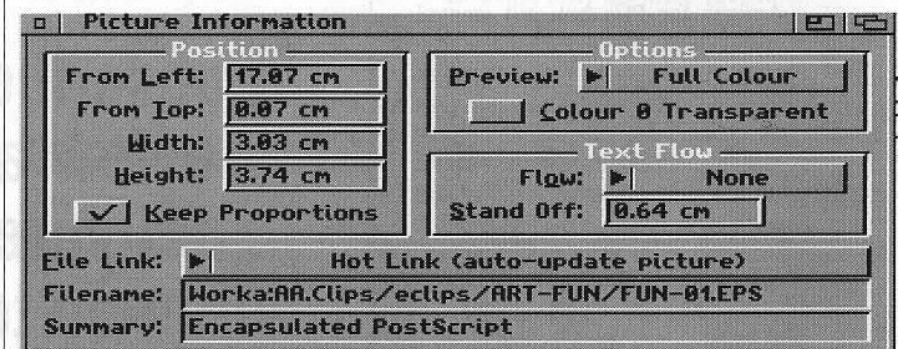
They say it's faster - a 10% improvement would be difficult to

measure. Indeed it feels a little snappier and some functions are noticeably quicker - especially in the saving and loading of complex

documents. Apart from a good tidying up behind the scenes, Digita have also added several noteworthy features. The best by far is the inclusion of an EPS picture import function. EPS, which stands for Encapsulated PostScript, is a very common method of storing clip art. But it is not without its limitations. EPS files can normally only be printed on a PostScript printer.

Printing them on anything else would require the program to preinterpret the PostScript, con-

EPS clip-art can now be imported, viewed and printed on any printer.



Landscape printing is now supported.

verting it into a bitmap image at the resolution you're printing at, and the send that to the printer. Wordworth 3.1 does all that and more.

You can now place an EPS clip art file just like a bitmap picture. It will print on any printer, and unlike many desktop publishing programs that import EPS files, you can preview the image on screen.

As you scale the image up, it appears to lose quality. However, the final printed result is truly wonderful. You see, scaling an EPS file involves scaling a metric description of a shape - there is no loss of detail the bigger you go. The only catch to using EPS files is that you must have 3Mb of RAM and a hard drive.

The little things...

Typeface and Size are now independent. This allows you to have multiple typefaces in a selection and then change the size of all typefaces in the block quickly and easily.

A small thing by any measure but it really makes a big difference when you have no style tags - it's a shame they didn't think to add them at the same time!

Shift-Click block selection has been added so that you can extend a text selection by holding down the Shift key and clicking elsewhere in the document.

Hey, it's a feature!

In the short file on what they've added, a rather amusing paragraph is included on changes to the print driver. It reads in full:

"Due to improved printing technology, the Print Borders may have to be changed for some printers to eliminate blank pages being ejected after each page." True, this makes perfect sense, but it reads like a classic "feature not a bug" line. The Help section includes a

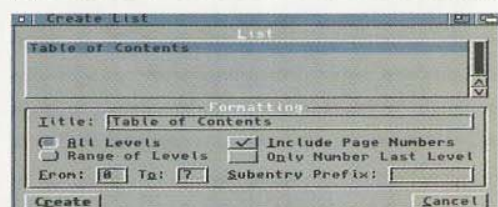
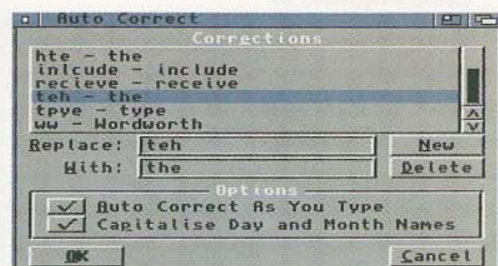
section titled 'Troubleshooting'. This is helpful for some problems, but if you're really stuck, Mark King at Amadeus is also very knowledgeable and continues as the Australia distributor.

The included readme file adds a couple of warnings about incompatibility. Apparently the Picasso Board is not the best companion for Wordworth.

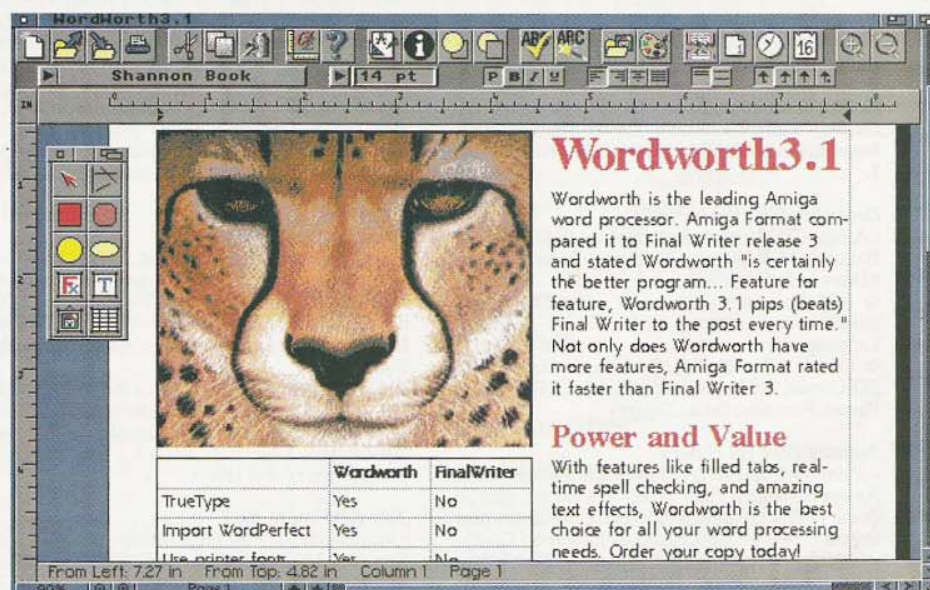
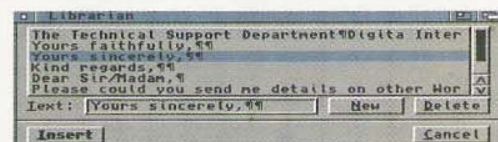
However, Digita say they're working with the manufacturer to solve any dramas. The other one to watch for is that wonderfully under-used public domain utility MagicMenu. If you run Wordworth, switch it off or prepare for trouble. Last of all, the Colorfont option is still not working.

Otherwise, Wordworth is shaping up to earn a solid reputation for wordprocessing with a little extra pizzaz.

As our comparison of Wordworth and Final Writer concluded, when it comes to producing newsletters and other snazzy looking documents, Wordworth is the pick of the bunch. However, long documents requiring considerable formatting would be better handled in Final Writer.



Wow! Drag and drop text makes editing easy! Just drag with the mouse and let go.



Wordworth 3.1

Wordworth is the leading Amiga word processor. Amiga Format compared it to Final Writer release 3 and stated Wordworth "is certainly the better program... Feature for feature, Wordworth 3.1 pips (beats) Final Writer to the post every time." Not only does Wordworth have more features, Amiga Format rated it faster than Final Writer 3.

Power and Value

With features like filled tabs, real-time spell checking, and amazing text effects, Wordworth is the best choice for all your word processing needs. Order your copy today!

| | Wordworth | FinalWriter |
|--------------------|-----------|-------------|
| TrueType | Yes | No |
| Import WordPerfect | Yes | No |
| Use printer font | Yes | No |

Reader Services - Back Issues

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- The Animation Workshop - How to beat those disk swapping blues - Deluxe Paint Tutorial - Animating in (apparent) 3D.
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☆ Games - Air Warrior, Two Player Games, 101 PD Games, KGB - Solution Part 2, CD32 Games Pinball Fantasies, Oscar, Diggers.

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☆ Hot PD - New Fish, plus Mand2000 - Helpline - Amos - Interfaces without banks - Online - Games you can play on your local BBS - C64 - Useful pokes - Games - Assassin (Amiga Games Pack), Cannon Fodder, Tornado, Stardust, Disposable Hero, CD32 Games - MicroCosm, Fly Harder.

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☆ Personal Write - super cheap word processing with interesting features - Map Studio Vol 1 - JPEG graphics - DPaint Tute - The DPaint beginners friend - Deluxe Paint Tutorial - The sky's not the limit - Education - Crossword Wizard - Hot PD - Utilities extract more from Workbench - Blitz Basic - Squeezing your Data - Desktop Publishing - Creating Reversed text - Help Line - Problems solved - Online AMIGA! - Start your own MAX'S BBS - C64 Column - CMD picks up GEOS - Games - The Settlers, Second Samurai, Kingmaker - Quest for the Crown, CD32 Games - Trolls, Alien Breed/Quak, Project X.

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☆ DTP Column, Creating forms in Pro Page - Hot PD - Online Amiga - Blitz Basic - C64 - Games - Liberation - Captive II, Skidmarks, Cliffhanger, Apocalypse, Legacy of Sorasil - CD32 Games, Surf Ninjas, Global Effect.

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SPECIAL EDITION ANNUAL

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CanDo 3.0

By Greg Abernethy

► Inovatronics have just released CanDo V3.0, the latest version of this excellent multimedia authoring package, and I must say I'm very impressed. There has been a huge amount of work put into the latest upgrade, and they have obviously been listening to their users,

as many of the items on my wish list have been implemented in this version.

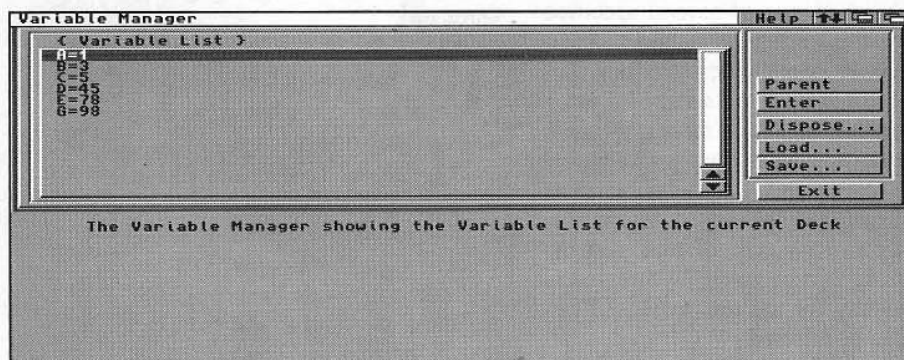
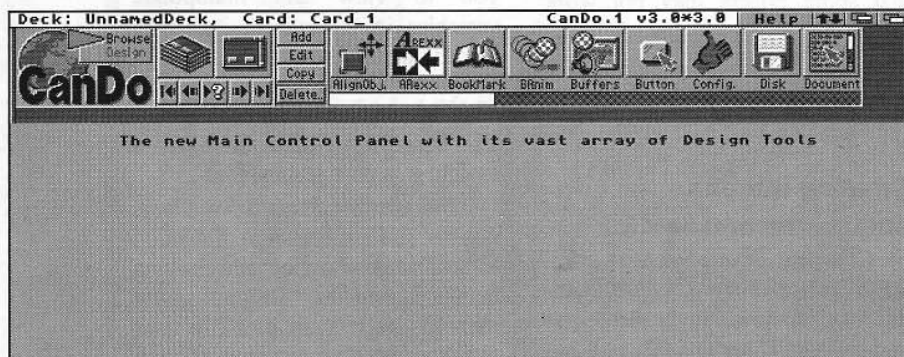
CanDo 3.0 comes on four disks and requires an Amiga with Workbench 2 or higher, 2Mb of RAM (I recommend 4Mb) and 8Mb of free hard disk space. It will not work

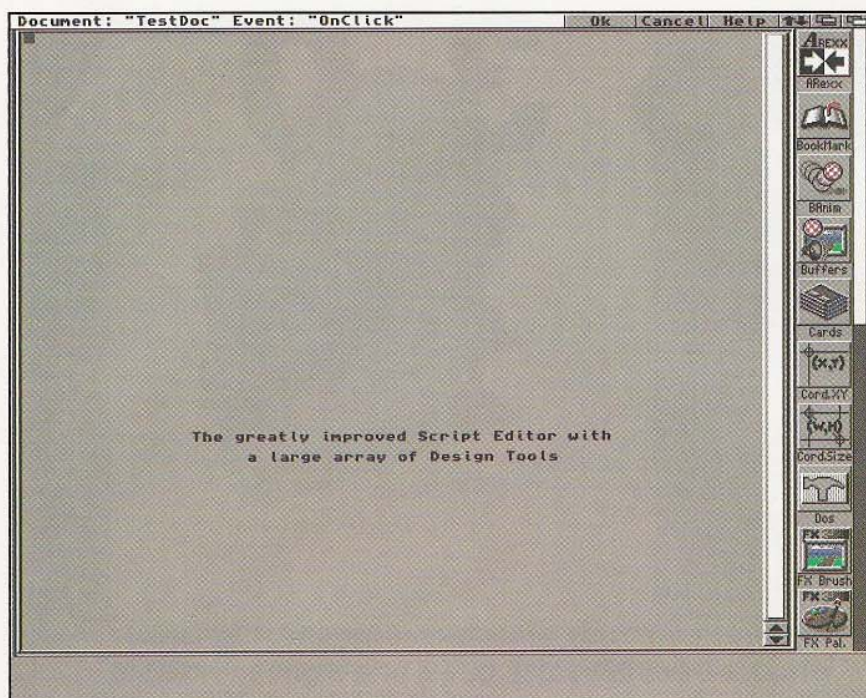
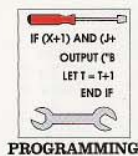
from floppy disk. The manual is very comprehensive. The first half of the manual is an introduction to the features of CanDo and how to use them correctly; the second part explains each command or function and, where practical, gives examples.

In addition, an Installation and Tutorial manual is included that contains projects that increase in complexity as you progress. There are twelve tutorials that demonstrate most of the features of CanDo in fun, interesting projects. It would not be very hard for a complete novice to begin with the tutorials and then be producing his own software very quickly. There's a very gentle learning curve for CanDo, compared with all other development packages I have seen. I feel that Inovatronics are looking at targeting a whole new customer base with this version.

Installing and running

CanDo installs easily, and uses the standard AmigaDOS Installer with its Novice, Intermediate and Expert modes. Novice mode installs all the CanDo components and tutorials and is recommended for





first time users; old hands may wish to use the Expert option, although I used the Novice installation to see all the tutorials and examples. There are many examples, although most of them have been seen in the V2.x releases.

CanDo loads very quickly, and then pops up the familiar Main Window with the Control Panel at the bottom. The first thing I noticed was the changes made to the Control Panel, which now loads as a high res interlaced screen. The tools for creating a CanDo application, such as Buttons, Documents and Menus, are displayed in a horizontally scrolling section.

Designing screens and effects

The options for setting up screens and windows is similar to earlier versions, with the addition of full AGA and Workbench 3 support. The best new feature is Screen Effects. You can specify what type of transition you want to occur when your application moves from screen to screen.

There are a large number of wipes and transitions, that really do enhance an application. There is one slight problem in working with screens of a different resolution, in that some effects may not work properly. I tried several different types of screens and effects and found most worked, and that some of the effects were excellent.

Creating buttons, documents and fields

Creating these objects is similar to earlier versions, with the addition of some extra border types and a LABEL feature. This allows you to add a separate label to an object, in one of several specified locations around the object. Additionally, you can resize or move an object around the screen by using the mouse. This makes it much easier to position and resize objects "on the fly". The field object has been greatly enhanced. Fields now support any type of font, and the background and foreground colours for the text in a field can also be selected.

Creating menus

The Menu Editor has changed from earlier versions, and is much more readable and easier to use. Any font can be used in a menu and separator bars are now available.

New tools

The AlignObject Tool allows you to quickly line up or resize objects in relation to one another. You can centre an object on the X or Y axis, align all objects on a page to a single object, or size all objects on a page to the size of a selected object.

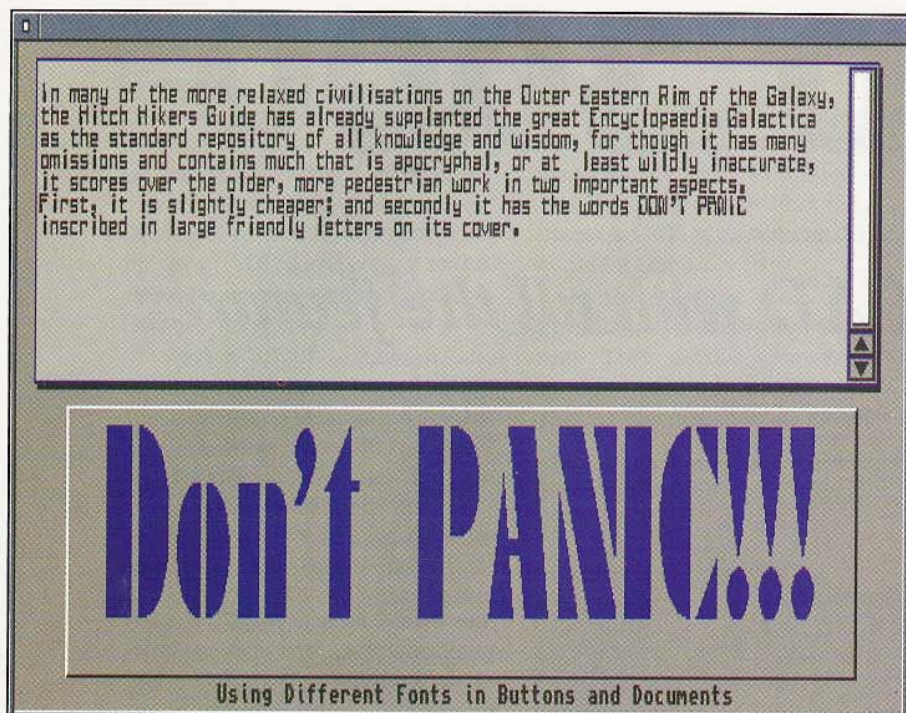
The BufferManager allows you to obtain information about the buffers currently defined in your deck. You can flush individual buffers from this tool as well as save a buffer to a file. The Config-CanDo Tool has some enhanced features, allowing you to customise your working environment to suit your needs.

The VariableManager allows you to view and manipulate variables in your deck, including records and arrays. You can enter array or record structures and view a specific array or record entry. You can also load or save a variable, or part of a variable.

The Brush Effects Tool allows you to add professional transition effects when showing and moving between brushes. There are more than 50 effects available. This is an excellent new feature and has unlimited uses for designing games software.

The Palette Effects Tool allows you to incorporate professional transition effects when changing and manipulating palettes.

The Layout Tool allows you to integrate text onto the screen and be able to wrap it around existing objects or graphic images. You use the mouse to define the boundaries for the text display, and then the text is inserted and wrapped to fit



within the boundaries.

The Librarian Tool allows you to keep regularly used scripts in a library that can be accessed easily. You can view any chapter of any book you create and insert the appropriate script where required.

New commands

One of the best new commands is PrintScreen which allows you to print the current screen. This has been sadly lacking in earlier versions and was desperately needed by me for outputting images from a paint program I had designed. I was forced to resort to Graphic-Dump to solve my problem.

AreaPalette allows you to draw a palette of the current screen colours on the screen in a specified area in a specified number of rows.

The Document commands have been enlarged to support multiple line selection, where you can program the document to display selected text in a different colour. This is useful for performing editing operations in a text editor or word processor.

There are many other new commands for handling system, graphic, object, error and event information - too many to explain in this review. Suffice to say that there is plenty to keep the experienced user busy for a while.

Overall

CanDo Version 3.0 is definitely the finest piece of multimedia authoring software available for the Amiga today. The interface is very user-friendly and intuitive, and the



package runs quickly on my Amiga 1200.

The manual is clear and concise, the tutorials are comprehensive and interesting and the command structure is as plain English as possible, making it easy to remember commands.

There is loads of online help and useful development support tools available. You can almost create an application without needing to write a single line of code. CanDo is approaching the fabled 4GL languages we hear of, and I highly recommend it as an upgrade for existing users or as a development tool for new users.

The support network set up by Inovatronics is very good and the pricing is very good considering the quality of the software. The only drawbacks I can see with the software are that it requires a fair bit of RAM, WB2 or higher and a hard disk. I can find no other flaws with the software itself. A definite 10/10 for CanDo 3.0 and Inovatronics.

CanDo 3.0 is distributed in Australia by Desktop Utilities on (06) 239 6658.

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XCAD 3000

Economy CAD with all the features

By Ian Smyth

► XCAD 3000 is a suite of programs for Computer Aided Design (CAD). XCAD has been around for some time, and I have been using XCAD Professional for about 5 years. XCAD 3000 is very similar to its ancestors for 2D drafting, with only very minor differences and additions. A separate program has been added for 3D modeling and drawing, and you can transfer designs from one to the other.

XCAD 3000 will run on any Amiga with KS 1.2 or later and 1.5Mb of memory, but if you try it on a floppy based machine it is going to be SLOW. A minimum of 2Mb of RAM is strongly recommended, as is a flicker free display. Line drawings on an interlaced display will drive you batty. Later model Amigas, with faster processors and graphic chipsets, greatly improve the response times.

After parting with your precious dollars, you will have a manual, dongle and three disks. The manual is a quality three ring binder with 670 pages divided into 2D and 3D sections. If you transfer the 3D section to another binder the manual will better withstand constant use, which it WILL get while you're learning.

Setting up

The manual mentions seven disks, but you'll only find three because the current distribution has all the files archived. Installation is a breeze, but the ReadMe file could be updated to explain the difference in disk numbers. Yes, it IS all there!

Once you've completed the install, you'll quickly pick up the manual. X-CAD is powerful and complex, and contains concepts that other simpler vector drawing programs don't. The menus aren't standard, but they let you access the enormous number of commands and instructions necessary for producing detailed drawings.

XCAD is not for knocking out a simple rough drawing. Use this package for accurate detailed design - you'll find the effort required to learn the mysteries rewarded when designs are converted to working reality.

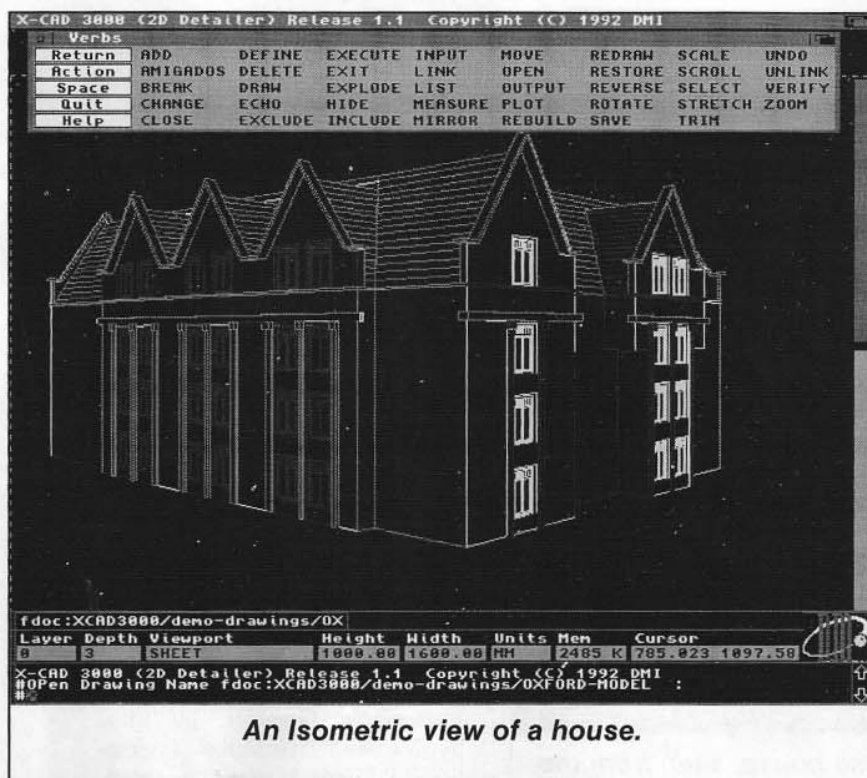
While XCAD's interface is initially daunting, there is no effective limitation on drawing 2D & 3D objects, shapes, and designs. Symbol libraries are supported, but no prepared XCAD libraries are available. You can use libraries in DXF format, though, or generate

your own. Library symbols can be quite complex, and can include whole drawings. Text fonts are provided - Times, Tempo, Standard, Helvetica, Fineline & GTS, and you can also define your own, though this is not a fast job.

Input devices

Graphics tablets are supported in the 2D program, including Cherry, the Summagraphics MM series (1812, 1201 and 961), and Benson, with a tablet based command menu included. A unique feature is the ability to design or modify and implement special menus both for mouse/keyboard (screen) operation and the drawing tablet, in both the 2D and 3D programs.

XCAD's drawing concepts include Viewports (an area of the sheet with assigned parameters such as Scale, text size and Dimension styles) in addition to entities, symbols, layers and depth within layers. 256 layers are possible, each containing up to eight depths. Colour is assigned by layer, and is limited to eight colours for 2D and eight or 16 for 3D. Entities (lines, points, arcs, polygons and so on) can be linked, either as equals or in a family tree (parent-child). Linked



groups can be un-linked. Symbols & Dimensions are also groups, which may be EXPLODED into the individual components (entities). Groups are operated on collectively - if you MOVE a group member, the whole group moves.

Grids and Construction Points can be defined and used as construction aids, as can Construction Planes when using the 3D program. Grid Locking can be turned on or off. Locations (for example the start or end of a line, or the origin of a circle or arc) can be specified freehand, absolute (referring to the drawing origin) or incrementally (referring to the last entered location). Drawing units are selectable from millimeters to miles, with resolution also user defined (almost limitless).

Commands

XCAD 3000's editing commands include STRETCH WINDOW, in which a defined rectan-

gle of the drawing is moved. Entities which cross the boundary are "rubber-banded", and there's automatic rescaling of any dimensions! STRETCH ENTITY can change the orientation of an entity when moving an endpoint; TRIM ENTITY maintains orientation. Entities may be TRIMMED to LENGTH, at a common INTERSECTION, or AGAINST another entity. Individual entities, entity groups (linked or just selected) and symbols may be SCALED, ROTATED, MOVED and MIRRORRed, with COPY variants of all these.

The CHANGE commands permit entities to be moved between layers & depths, but not between Viewports. CHANGE commands permit many other corrections, additions and re-assignments - too numerous to cover here.

Some items appear in the menus but not in the manual. These are COMPONENT, TERMINAL, NETLINE, NETWORK, HIDE, RESTORE and REVERSE.

About half appear to work, and figuring out what they do isn't easy. Regard anything undocumented as a bonus - no claims are made or implied. I think XCAD's author has been implementing special circuit design features.

The 3D program adds pull-down menus to the interface and provides spatial drawing and manipulation capabilities, but is similar to the 2D program in general operation. While measurements can be made, dimensioning is not supported, since this is more appropriate to 2D presentation. Detailed exploration of the complexity of this department would change this review into a tutorial - maybe a possibility for the future?

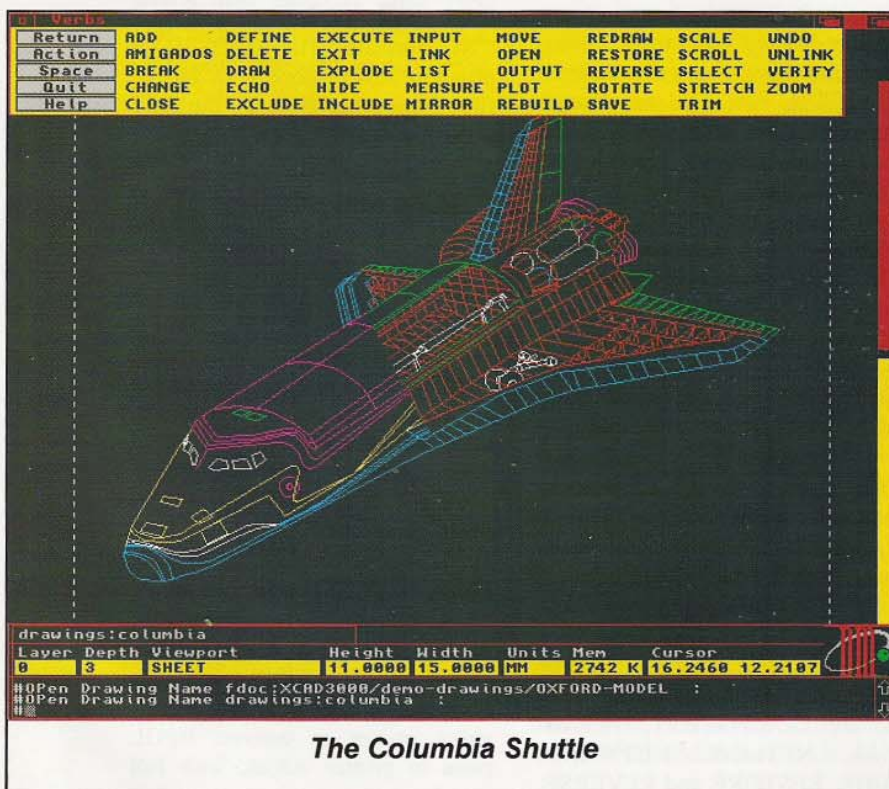
DXF format (AutoCAD) files can be imported from other systems with some conversion, as system concepts of layers and levels are different. There are some shareware programs included in the package which convert HPGL output from XCAD 3000 to Aegis, DXF, Postscript, Sculpt 3D/4D and CNC formats. The HPGL2DXF program MAY work with HPGL files from other systems, but only if the file matches XCAD style.

Plotting and printing

2D Output is either in plot format or printer graphics. Screen images can be saved as IFF. XCAD supports HPGL, CPGL DM/PL and BGL plotters. Preferences printers can be used, but the results are limited by the screen resolution. Some printers are supported directly with excellent results - Epson 9 and 24 pin dot matrixes, Kyocera lasers, HP LaserJet, Xerox 4020 and Mitsubishi G500. My Epson DLQ 2000 produces excellent results at 180 dpi up to almost A2 size. The PD program PLT (included in the MultiPlot distribution) can be used with any Preferences printer to convert HPGL plots to printer output, with full



3D Wireframe Isometric view of the same house, seen from the rear quarter. Perspective and rendered views are also possible.



control of scaling and colour selection. LARGE amounts of memory are required to make good use of PLT - I use it regularly to produce proof "plots" of PCBs, and 6Mb is the minimum at A3 size for multi-colour output.

The hardcopy output of the 3D program is limited to HPGL plots and screen dumping to Preferences printers, so you need PLT for good printer output. 3D drawings can be saved in XCAD (3D), IFF and Turbo Silver formats.

Novice users must consider that programs like XCAD are tools that facilitate computer based drafting and design, and do not substitute for lack of knowledge about drafting and design principles, presentation or practices. A good reference text which I continually find helpful is Principles of Engineering Graphics, published by Maxwell MacMillan International Editions. If you're just starting out, you should find yourself a good reference book like this one.

Conclusion

XCAD 3000 has a R.R.P. of \$450, with a substantial discount for Amiga Review subscribers. When I consider that five years ago I paid substantially more for the earlier version, this definitely looks like value for money.

Are you likely to find XCAD difficult to learn? Yes. But if you persevere you'll find you can do things that are either grossly time consuming or practically impossible with manual drafting.

If you don't have the money for 3000, there's a cut-down version, XCAD 2000, for \$180. All the main features are present, but there are limits on layers, depths and some menu items, and the variety of output and save modes. Upgrades are available from XCAD 2000 to 3000 for the difference in the retail prices.

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Amiga programs 4 sale Inc: Fractal Pro V2- \$3, Deluxe video 1-\$10. Aegis video. Titler - \$10, Kindwords V2 Word processor - \$10, Wordworth V3 demo - \$3. All originals. Ask for Travis. \$30 for the lot. Ph: 053 810 194

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Avtek Modem 2400 baud \$90 ONO. Ph: John: 06 231 9966

Books - Amiga Tricks and Tips - For tapping into Amiga's true power. Explains how to get the most

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Commodore 64 games - Fortran 64 Programming language worth \$90 sell for \$20. Advanced Dungeons & Dragons Collectors edition set worth \$90 sell for \$20, Six Sizzlers pack (incl Last Ninja)\$5, Solid gold 6 game pack \$3, World Class Leader Golf \$2, C64 pro pak disk \$1. All are on disk. \$45 lot. Ask for Travis. Ph: 053 810 194

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For Sale: Amiga 500 system with CD-ROM drive, 1Mb RAM, MIDI Interface, 70 disks original software, 200 blank disks, many games on CD-ROM, heaps of extras. Cost over \$3000, sell \$850. Phone (051) 223 094.

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WANTED URGENTLY - Any part of the Kings Quest, Police Quest, Space Quest or Leisure Suit Larry series. Will pay \$20.00 for originals. Also will pay \$30.00 for Indiana Jones and the Fate of Atlantis or Another World. All games must be able to be played on A500. If you have any of these games and would like to sell them call Cain Clare on (02) 669 2769.

WANTED: A1200 with or without HD ph: 074 919 190

WANTED: Amiga game called "Awesome". Willing to pay up to \$25 - \$30. ph: 07 353 2432. Ask for Cameron Ross.

WANTED: IV24 Preferably with Professional Transcoder. Also 386 Bridgeboard. Call 065 411 722.

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Ads appearing for the second month
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A2386SX-25 Bridgeboard, 3Mb RAM, Janus 2.1, DOS 5, SVGA Multi-IO card (2 serial, 1 parallel, 1 game, 1 IDE controller, 1 floppy controller, 512k SVGA graphics: all on one card!), 40 Mb IDE hard disk. IBM HD floppy required but not included. \$800 the lot. Contact Craig Arnoldt. 054 419769(w), 054 413693(h).

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Accel-500 24 pin wide carriage printer 500cps, in as new condition in box with all manuals and 2 new colour ribbons. \$480. Ph (044) 437 190.

ADPRO 2.3 and PRO conversion pack 2.3 \$80.00, DVideo III \$20.00. Phone Mark (09) 344 5476.

Amiga 1200 4Mb RAM expansion. Blizzard 1200/4, 32 bit, 70ns with sockets for 68881/2 and another 4Mb. \$290. Perfect condition. Phone Antti on (06) 272 5980 BH; (06) 241 33973 AH.

Amiga 1200 with 40MB Hard Drive, GVP 1230 II 40 Mhz, 10 Mb RAM, SCSI board, external SCSI box containing NEC 2X CD ROM drive and a SyQuest 105Mb removeable hard disk drive, Golden Image Hand Scanner, programs and games. All as new condition \$2700 ono. Wollongong (042) 96 1809.

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Amiga 600 for sale, 2Mb RAM, Clock, History line, Burning Rubber, Innocent until caught. Mouse, Joystick, Manuals only 6 months old, excellent condition \$380 ono. Call Craig on (02) 453 6662.

Amiga CD32 mint condition, 3 months old still under warranty with 21 pin TV SCART connection and joypad, hardly used gift. Software included - Oscar & Diggers, Mean Arenas, Robocod 2, Pinball Fantasies, D Generation, Overkill and Lunar C, Sensible Soccer, Liberation, Arcade Pool, Ultimate Body Blows, plus (educational) Barney Bear goes to school, also 4 magazine cover disks with over 20PD games ect. Mags included. Sell \$600 firm a bargain! Call Ross on (06) 297 6166 anytime.

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Amiga programs. Boxed with manuals, Elan performer \$20, 3D const kit with VCR \$30, Ultra design 1.1 \$80, A1200 clock module \$30 (unused) & Post. A Edwards P.O. Neville 2799, NSW.

Amigavision professional original program disks and manual wanted. (02) 821-1639.

Attention! AMIGA CD32 CLUB for Victorians. Swapping, selling and hiring games. Many games. Also hints, tips and cheats. Also mag CD's available. Also hints and tips for many ADV games on A500, A2000. Please write for info to : Matt A. 11 Harcombe St, Bell Post Hill, Geelong VIC, 3215.

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For Sale: Amiga CDTV (12 months old) with
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For Sale: C64 software. Printshop includes
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For Sale: Commodore 128D Computer,
Commodore Colour monitor 1084S, Citizen 120D Printer, Manuals and games. Excellent condition. \$500 ono. Also available for sale, Freedom Computer Desk \$199. Phone: Lorraine on (02) 528 6569.

For Sale: D-Paint IV and Saxon DTP, \$60 each or
both \$90, A2090 board \$45, Two C64 computers no power supply \$45 each. All of above are new. Also wanted: Flicker fixer and accelerator to suit A2000. Wayne Boulton (02) 742 5385.

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ono. Sony XV-5000CE Video Colour Corrector \$195 ono. Great for enhancing colour, clarity and picture quality of your videos or digitising. Phone Steve on (02) 708 4403.

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Unique productivity, developers or educational system. Includes disk drive, mouse, GEOS productivity software, Pascal compiler, games and heaps more software. Nearly 20 books on Basic and Kernal ROM chips, 6502 assembly language, GEOS programmers manual, etc, introductory and advanced. Parallel printer interface, 100 blank disks - absolutely everything you will ever need! Contact Miles, Malcolm or Geoff Trebilco. (03) 802 3758, Glen Waverly VIC. Price \$500.

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GVP A1230 Turbo '030'882 40 Mhz, 4Mb RAM \$950, A2000 40Mb HD, GVP \$1500, Accelerator and SCSI board @ 25Mhz, V2 and V1.3 ROM, Philips monitor, 2 FDD, 2Mb RAM, Ph MARK (06) 2861358.

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graphics capabilities, original disks and manual, \$40 ono. Mark (02) 750 5195 or (02) 805 0111.

Wanted - Ghouls 'n Ghosts. Will pay \$20. Ph Jim
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Wanted Urgently. 1 AMIGA 3000T power supply
or schematics for same. Contact Laurie McKay on (051) 773835.

Wanted: Accelerator to suit A2000. Keyboard to
suit A2000. 1x4 ZIP page mode memory chips (4Mb in total). Phone Steve on (02) 708 4403.

Wanted: An Amos pen pal who knows what they
are doing & who would be glad to help make games and so forth. Write to Ron Scott 41 Cedar Cres Forbes NSW 2871

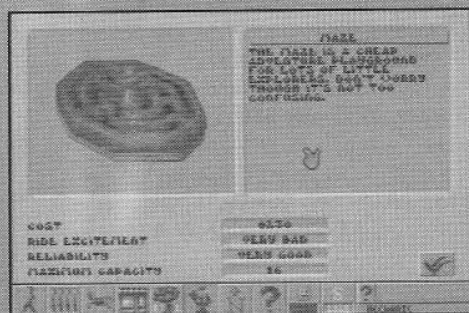
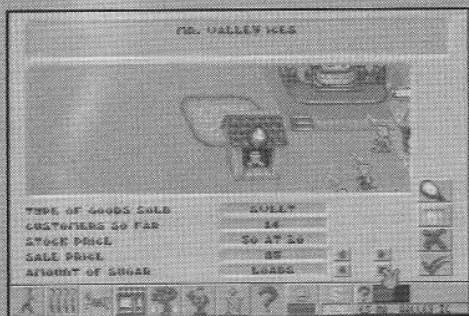
Wanted: For Amiga 500 - ICD AdRAM 540
expansion board and manual with or without DRAMS. Phone Cliff Hickman (049) 469611.

Wanted: Miracle piano system for Amiga. Call
Sam Blinkhorn (066) 333184 or write PO Box 186, Kyogle 2474.

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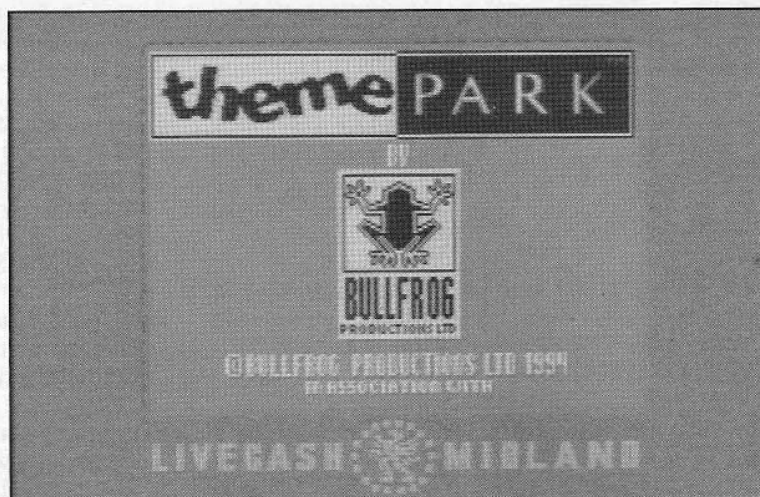


Theme park

Amadeus

Ph: (02) 652 2712

RRP \$69



Theme Park is a simulation game that gives you the chance to build and run your very own amusement park.

After buying the land, you lay out paths, shops, rides and queues, hire and fire employees (from idiots in fuzzy suits through handy-men and security guards), research more spectacular amusements and, of course, make sure that every last penny is mercilessly extracted from the pocket of every schmuck who wanders through your gates.

You can tune the whole park to your liking, and be as low - I mean shrewd - as you like. Sell drinks next to the fries stall and pump up the amount of salt on the fries to the "HEAPS" mark, for instance.

Once your park's got going, you can start playing with the extra features. Freeform rollercoasters and other do it yourself rides - build wherever you want. Zoning staff, so there's always a handy-man near any troublesome rides and vandal-prone areas have a good solid Gestapo presence. Statistics on absolutely everything. Fireworks.

The point should be made that Bullfrog pull no punches in their depiction of the theme park experience, and that means, well, vomit. Crank the rides up too far, plant an odiferous outhouse upwind of the

exit ramps, and watch the punters puke. You have been warned.

The first version of Theme Park I saw was the IBM CD-ROM version, which featured some absolutely stunning animations; a magnificent intro, and a separate rendered animation for every ride.

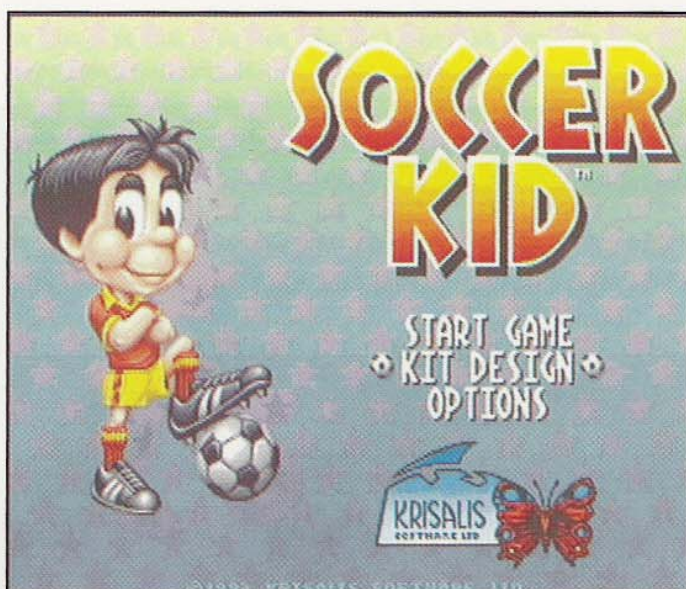
The Amiga version's just two disks and runs on ECS machines, so forget all the spectacular padding. Fortunately, though, it's an excellent conversion otherwise, with smooth control, clear graphics and useful sound.

You can tinker with the difficulty levels so that kids can potter around in a simplified park with no researching of new facilities or stock management, and the more strategically advanced can wade right into the statistics.

A big park can get very involved, but you can still keep a handle on it all with the plethora of info screens and adjustable options. My only real dislike is the dumb hard disk installer, which creates a drawer with no icon. Big deal.

Overall, Theme Park's a bunch of fun. It's even got a funny manual. If you like strategy that doesn't take itself seriously, get it.

□



I'm flabbergasted. Another cute platform game for the CD32 with a storyline so ridiculous I won't bother to mention it. How many hundred does that make?

Sure, it's an overworked genre, but Soccer Kid stands out from the mass. It's got zippy controls, clear, cheerful graphics and a gimmick that's better than most - you zap the baddies not by shooting them or jumping on them, but by booting your soccer ball at them.

You can do straight forward kicks with a simple stab of the red button while moving, and with a bit more manipulation you can kick the ball straight up, boot it in a high lob, drive for distance, head it or scissor kick it backward. You can even balance on the thing for super-high jumps.

If you wallop the ball out of sight, you can generate a new one by holding the red button. The fewer times you do this, the more points you'll get at the end of each level. There's an art to losing the ball as few times as possible - lobbing it over spike pits and then jumping after it and collecting it before it hits the ground, for example.

There are savepoints half-way through each level, and several levels make up a scene, and several scenes make up a country, and there are five countries. The countries are all depicted in a sort

of toned-down Viz comics sort of way, but hey, the whole idea's silly, all right?

There are the usual platform game monsters, bonuses and pit-falls. The monsters come back when you die, and can't quite decide on their location when they're off screen. On the plus side, you can hit things you can't even see by simply thumping the ball off-screen and seeing if something dies.

You can only save the game at the end of each of the five countries. This isn't a problem for a GOOD gamer like you, though, is it?

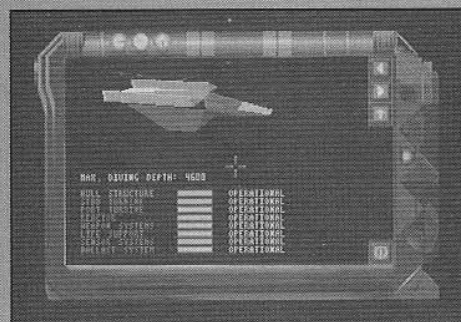
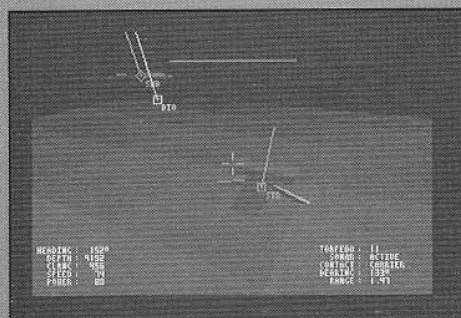
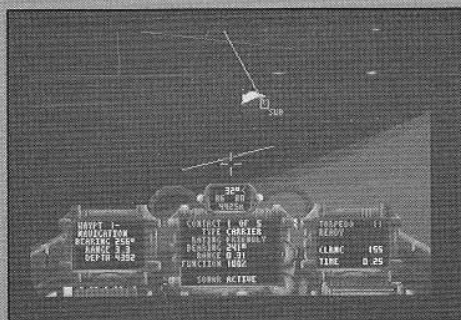
The sound's ordinary, the graphics and animation are as good as you'll find in this genre, and once you get the hang of the unusual play style controlling your Kid is very simple. You can even customise his kit colours, so he matches your favourite team.

Soccer Kid's been out for a while and the CD32 version just adds a long but silly animated intro. But it's still definitely worth having.



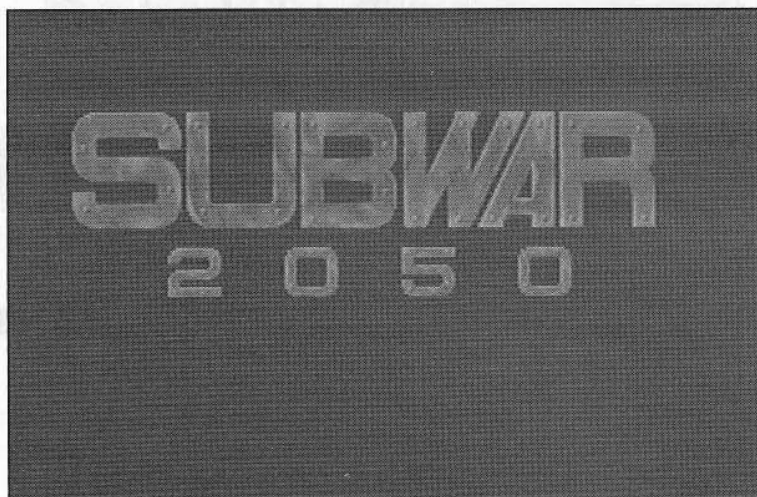
Soccer Kid CD32

Hotpoint
(02) 634 5499
RRP \$59.95



Sub War 2050 CD32

Amadeus Computers
(02) 652 2712
RRP \$69



Submarine games tend to be dim, slow, nail-biting strategy epics. Hiding at five hundred fathoms while the destroyer above pings like crazy and drops drums full of explosive to where it thinks you are. Sub War 2050 is not like that.

In the year 2050, the seas are of vast economic importance to assorted cyberpunkian mega-corporations, and they enforce their management decisions less with diplomatic missions and more with high explosive. Basically, this is an underwater combat flight simulation, with quite nifty vector graphics. In order to avoid the stygian gloom which, like it or not, is what you get when you dive deep, Sub War cheats with various computer projections overlaid onto the screen, including a rather nice polygon sea floor.

The underwater feel is nicely done. Sound effects are distorted and reverberant, tightly turning subs produce trails of improbable but pretty bubbles, and the game even includes sonar-proof water temperature boundaries, indicated by green and red undulating grids. The programmers didn't bother putting in anything above the surface - climb to zero feet and you just get a black sky.

Naturally there are lots of things to fly and shoot at - various

fighter subs, ultra-deep divers, re-fuellers, cargo carriers, and the monstrous sub carriers and missile boats. Added to this is assorted marine wildlife and installations on the bottom.

Missions vary from the usual find the bad guy jobs to oddities like sabotaging whale farms and spying on people. Many missions team you up with one or more wingmen, and you can give these guys separate orders.

I looked at the IBM version of this game last year, and I was very impressed. The CD32 version lacks the luscious texture mapping and smooth objects of the PC version, and can't come near the frame rate you get from a fast 486 PC, but it's still quite playable. The control pad works passably well, despite the many functions - the forward and reverse buttons are used as shift keys, and there are a couple of menus for the game options and views. Directional control with the pad is rather annoying if you've used the IBM analog joystick version, but you get used to it.

If you're looking for absolute realism, SubWar 2050 isn't it - Buck Rogers technology and an altogether too interesting underwater world. But for fun, it's a blast.

□



► In the continuing series of Old Game Ideas Repackaged comes X-it, a puzzle game based on a fairly elderly idea.

Puzzle fans will recognise X-it's genre; it's a boxes and holes game. The most basic boxes and holes game has a top down view; you're a little guy who pushes boxes into holes in order to leave a level. This sounds easy, except you can only push boxes; if one gets stuck in a corner you can't move it. Very complex levels can be created, even with these basic rules, once the designers get into extra obstacles and lots of boxes to move.

X-it adds a lot to the concept, though. There are different types of blocks, different types of floors, different types of holes and power-ups.

Light blocks can be pushed two at a time; heavy blocks need wheels before you can move them at all. Steel blocks are repelled by magnet blocks; slippery blocks never stop moving, once started, until they hit something; ice blocks melt. Keys fit into locks in the wall and open doors. Icy floor makes everything behave like slippery blocks; glue stops blocks dead and makes it impossible to move them. Power supply floor makes freezer and magnetic blocks work, and also run teleport pads, which

send to teleport receivers. Power floor also electrocutes you if you walk on it - unless you've turned the power off with a switch.

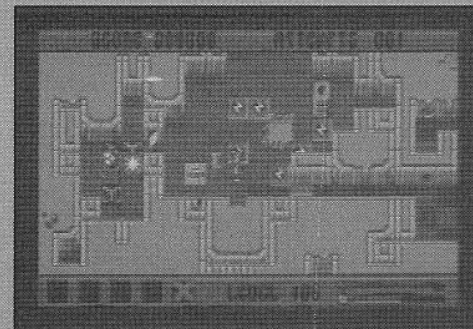
Hearts replenish your energy, but don't reset the time limit for the level; the Tractor Beam can pull things towards you. Detonators set off bombs, which go off by themselves after a while. There's more stuff, but you get the idea. Lots of elements.

There's also a fly-through-the-tunnel bonus stage after you finish each group of levels, but it's nothing very exciting.

X-it's graphics are good and the animation, such as it is, is fine. The sound's not especially memorable.

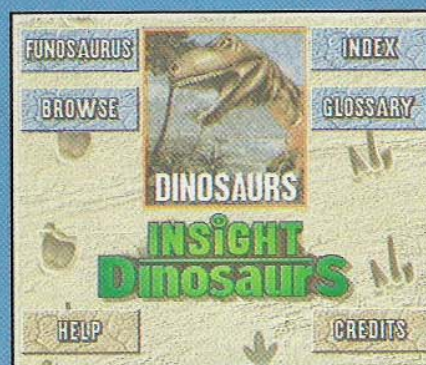
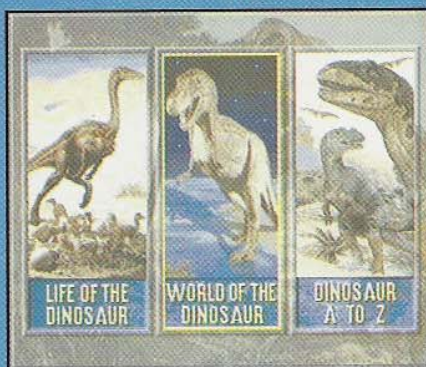
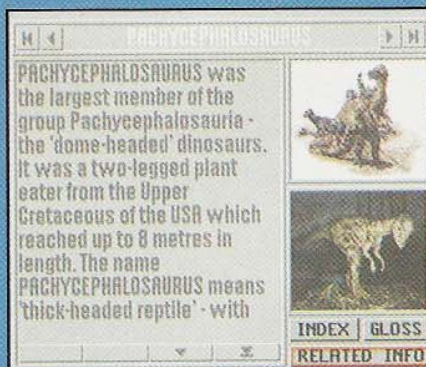
The manual's only got a few pages for each language, and doesn't have any pictures of the different objects so you have to use trial and error to figure some things out. You also can't hard disk install the game, though there's not a lot of loading while you're playing. At least there's no daft refer-to-manual copy protection.

X-it is no revolution in modern gaming, but it's quite well executed and has lots and lots of levels. If you like this sort of game, this is the sort of game you'll like.



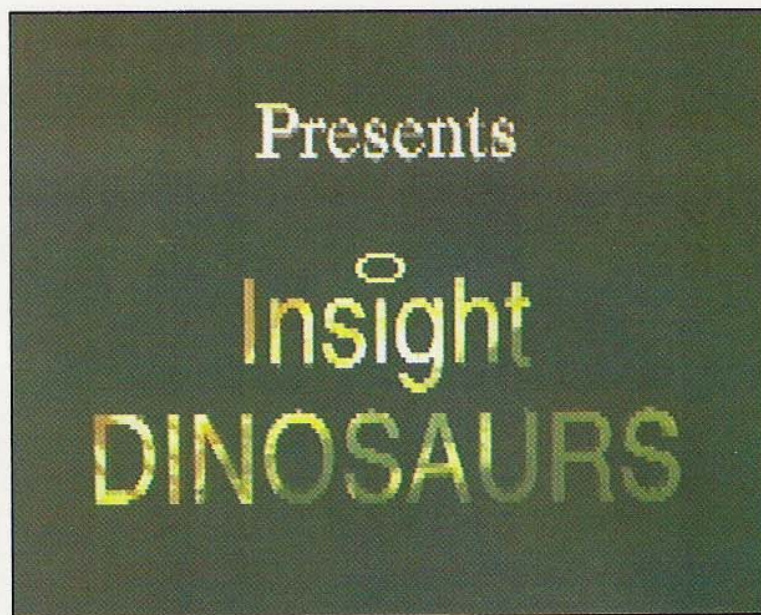
X-it

Hot Point
(02) 634 6499
RRP \$49.95
Runs on all 1Mb Amiga



Insight Dinosaurs

Don Quixote
(076) 391 578
RRP \$89.95



Among the latest batch of software for the CD32 and, unusually, CDTV too, are two new educational titles from Optronica. The Insight series uses a custom interface to hop around the many megabytes of text, sound and graphic data. Its all simple enough for a child to pick up in minutes.

Both discs are also "TV-ready" - all of the text is large enough to read on a standard television from a normal viewing distance. Much of the information is presented as pictures and animations, with clear narration (in a rather plummy British accent, a nice change from the usual folksy Americans). Both discs also have an extensive linked index, and the dinosaurs disc contains a glossary for all those five-syllable dino-specific words.

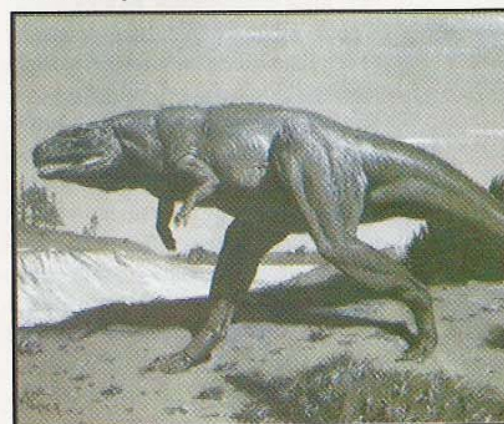
The information can be presented at quite a few levels as well. Most topics will have a chunk of text and a couple of narrated pictures or animations. The dinosaurs disc also has an extra info field which will zap you to any other bit of information that the producers felt was related. You select what you want to see.

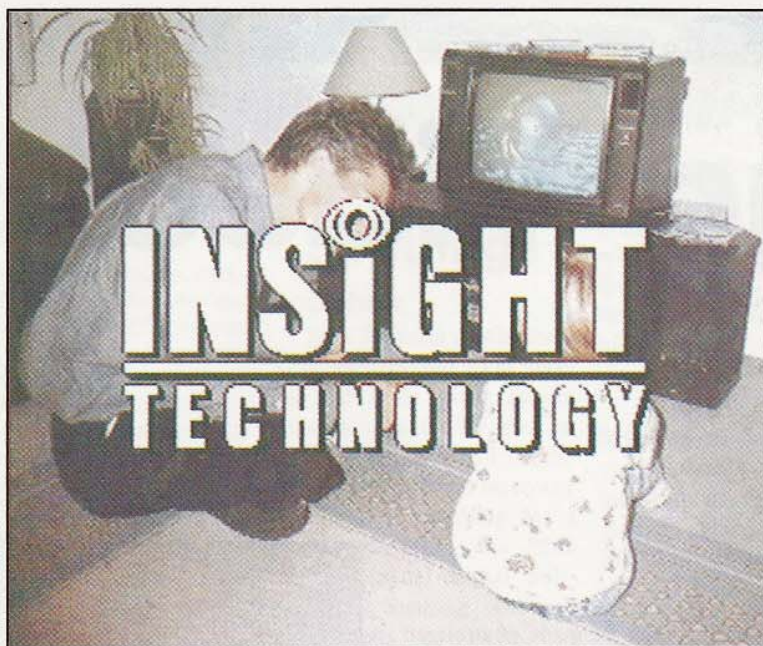
One nice feature of the interface is the ability to browse. The feature has been well implemented on both discs. With the technology

disc it is particularly useful - the disc actually picks up on what interests you and gives you other related entries. For example, when I was browsing without reading through the text the entries appeared at random, until I viewed most of the info on a topic (dynamite) instead of just beeping to the next one. Insight Technology then offered me a bunch of entries on things like ammunition, guns, missiles and tanks.

Not that the disc is all death and destruction - the next random topic offered was the space program.

Which brings me to the content of the discs, for while the interfaces are very similar the content obviously isn't. The technology disc is very much a "this is how it





works" disk. The information is presented at a level which most people would have no trouble understanding; a kid at the "how does that work, dad?" stage would take to it like iron filings to a magnet. There is certainly no shortage of topics, either. From the ball-point pen to space suits, it's all here.

The dinosaurs disc contains about the same amount of information on its own topic. It covers specific dinosaurs including all your favourites and a few you'd probably never heard of. As with the technology disc, there is always a picture with narration with each entry, and often an animation as well (which is no mean feat when you consider the subject matter!).

The user can also browse through generic entries on the di-

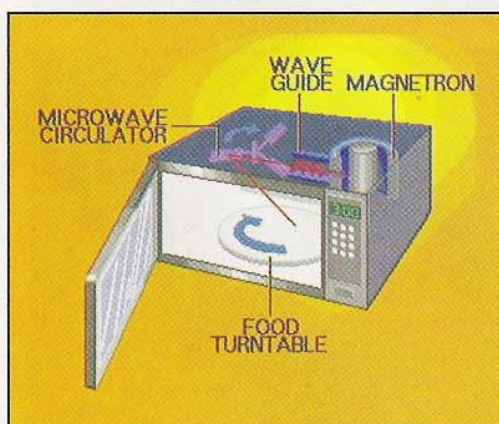
nosaurus' habitat, anatomy, attack and defence and diet, as well as theories about their extinction. There's even an entry on fossil hunting.

The index works the same way as Insight Technology's; you get a huge list of keywords to scroll up and down, and you can hop whole letters by moving the control pad left or right. It's not as nice as having a keyboard, but it'll do, since the index scrolling's got an accelerate feature that lets you move very quickly.

The other extra on the dinosaurs disc is the "Funosaurus" section, which was cutesy - but what do you expect from an educational disc? You can colour in a dinosaur picture, or go crazy with a sliding block puzzle made out of (you guessed it) a dinosaur picture. There's even a quiz to put your knowledge of the REALLY big words to the test.

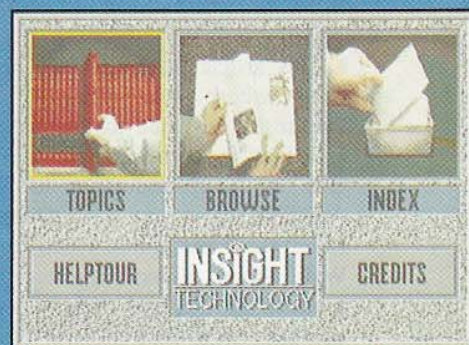
All in all though, the quality of both titles is excellent; they are very well produced and easy to use. School kids can literally scoop project information out of them. The only real downer is the price tag; at \$89.95 each they're a little pricey, but well put together.

- Mark Cocquio



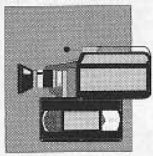
AMIGA Review

CDTV
32



Insight Technology

Don Quixote
(076) 391 578
RRP \$89.95



Amiga Videos

By Daniel Rutter

► This article examines two products whose sole similarity is they're both related to the Amiga and they're both on videotapes. One is An Introduction to the Amiga 1200 volume 2 - A Deeper Look, the latest tuition video from Wall Street Video. It's a worthy product, and I'll deal with it later - because, let's face it, the other video in this review's much more interesting.

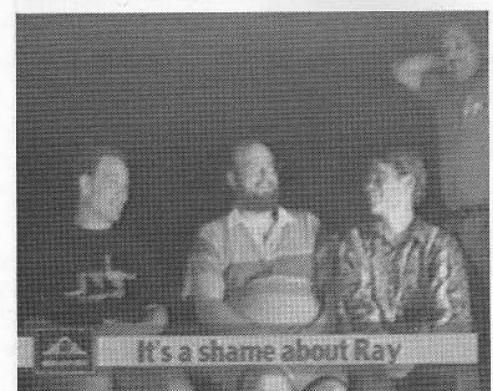
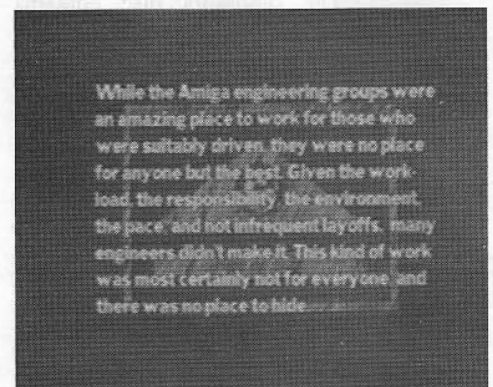
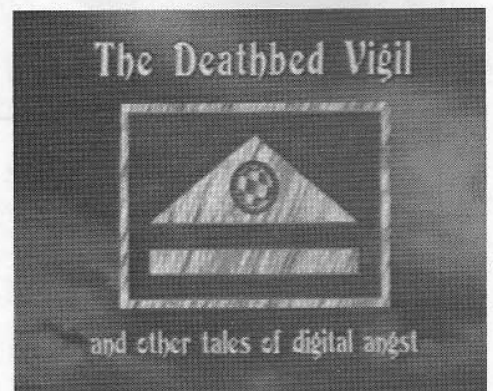
The Deathbed Vigil - and other tales of digital angst

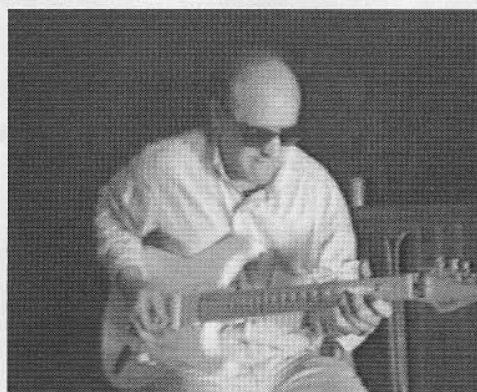
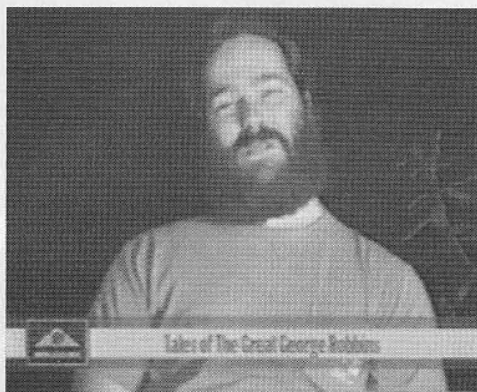
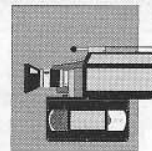
Dave Haynie's Deathbed Vigil video has become something of a legendary item since its release last year, and only recently has it become possible to get a copy in PAL format for Australian dollars. It's essentially a documentary on the history of Commodore, interspersed with lots of endearingly amateurish footage (thankfully recorded on a good camera) of various Commodore luminaries - any Amiga aficionado will recognise a lot of names and now have a face to put to them. The dodginess of Haynie's camera work in the early, Commodore building walkabout section - where Haynie points out a load of vast empty spaces where cool stuff used to happen - was sufficient to make Andrew Farrell

queasy; I must be made of stronger stuff, though the constant 20 degree list had me leaning the other way to compensate.

The video was recorded during Commodore's last days and immediately afterwards; it's the place to be if you want to see ex-Commodore engineers and programmers getting tired and emotional and saying what they really think about the way upper management - notably Mehdi Ali - turned the company around from two billion dollar profits to half billion dollar losses in just a few years. This would be a good place to point out that although this video doesn't carry an official rating, if it did it would be "Occasional coarse language and graphic violence (against computer keyboards)". There are naughty words and disturbing scenes of techno-dweebs doing stupid things in this video. Beware.

Nonetheless, this is THE video to see if you're interested in tantalising "inside Commodore" facts and fables. SEE - real live AAA machines, with Haynie pointing out the chips and naming them. HEAR - the saga of the speed bumps (Commodore put speed bumps all over the place to discourage their employees from Manselling around the car park; the employees interacted with the





bumps in a number of ways, up to and including heaping snow around them to make sure the snowplough took them out and sending a huge chunk to the manager responsible! HEAR - all about Property Passes - everything that went into the building had to have a property pass, but the person handing them out knew nothing and wrote passes for Boeing 747s, "One Electronic Device", a Cray MP supercomputer (which pass was acquired just in case Commodore ever got a Cray, so the holder could take it home) and any number of other dumb things. HEAR - The Chicken Lips Blues (I got a computer I can no longer use...)! SEE - Mehdi Ali burned in effigy! And, of course, MORE!

The only downer about this video is that it costs \$70. Yow. But hey, this is history. It's hip. It's groovy. It marks you as a dweeb with income. Our copy might have been free, but I would have paid for it anyway.

Contact Matthew Christou on (09) 271 0624 to order your copy.

An Introduction to the Amiga 1200

- A deeper look Volume 2

Looking rather anaemic in this company but perfectly good in its own right is the second installation of An Introduction to the Amiga 1200. The first of these videos ran for 60 minutes and covered the most basic aspects of understanding computers in general and elementary Workbench in particular.

This sequel still isn't power user stuff, but it covers all the classic newbie questions. Over the video's 90 minutes you'll learn about RAM and the RAM disk, every one of the WB3 Preferences programs, basic shell use, installing programs to your hard drive, importing pictures into a word processor, spell checking documents and printing, multitasking, using MS-DOS format disks, Commodities and the WBStartup drawer, using HDBackup and using the Amiga Early Startup Menu (the boot menu).

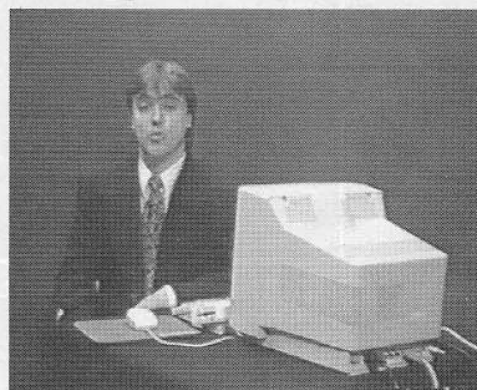
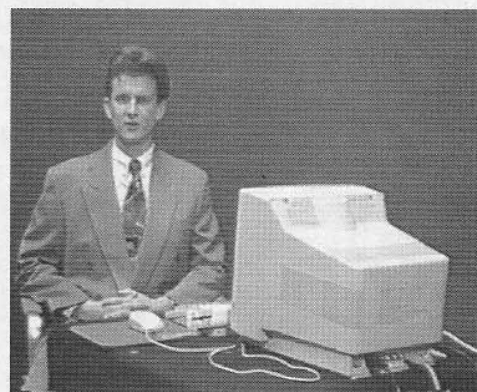
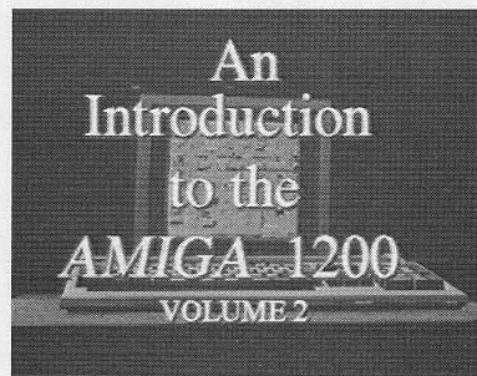
The presentation is similar to that of the last video, only with most of the corners rounded off. All of the narration is now supplied by Robert Gaunt, with Greg Wall doing the intro and afterword; the nice wipes and titling and occasional picture-in-picture bits are still there, and you also get big bold title screens for each section, so scanning for a particular topic is easy.

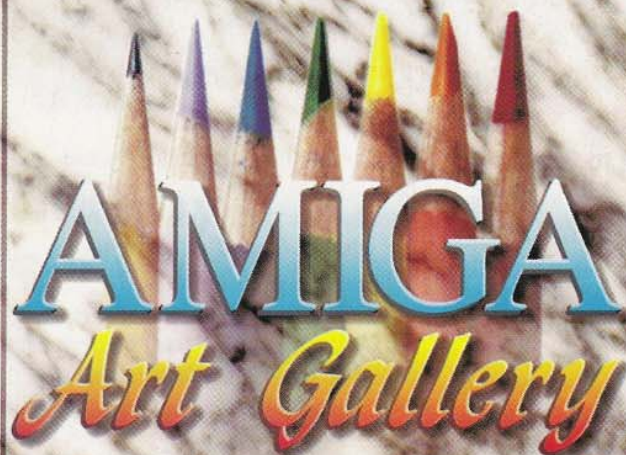
There are a few minor continuity glitches and Gaunt mildly fluffs a couple of lines, but nothing gets in the way of your comprehension at all.

The only aspect of the video that might puzzle beginners is the "super-turbo" behaviour of the on-screen 1200; to avoid Great Viewer Boredom the action's accelerated when formatting a disk or rebooting. Beginners might get alarmed about their own machine apparently running so much slower.

Overall, this is a genuinely useful what-you-see-is-what-you-get introduction to the Amiga for people who've figured out how to do the basics. Recommended.

Contact Wall Street Video on (02) 411 2108 to order your copy; \$65.





AMIGA Art Gallery

By Norman Cantrell

Welcome to this months Amiga Art Gallery. More great Australian Amiga graphics is on display. So, if you have some graphic art to contribute, why not shoot us a disk - or modem the file to our new number on (02) 879 4236.

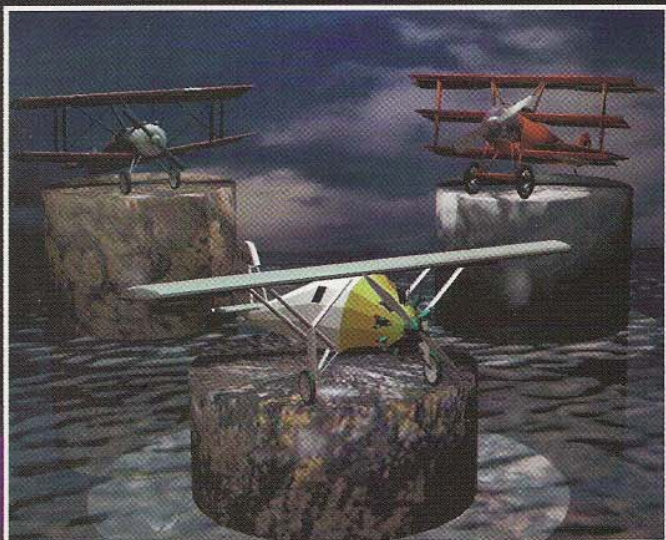
Please include your name, tel no and how you created the image, in a text file.



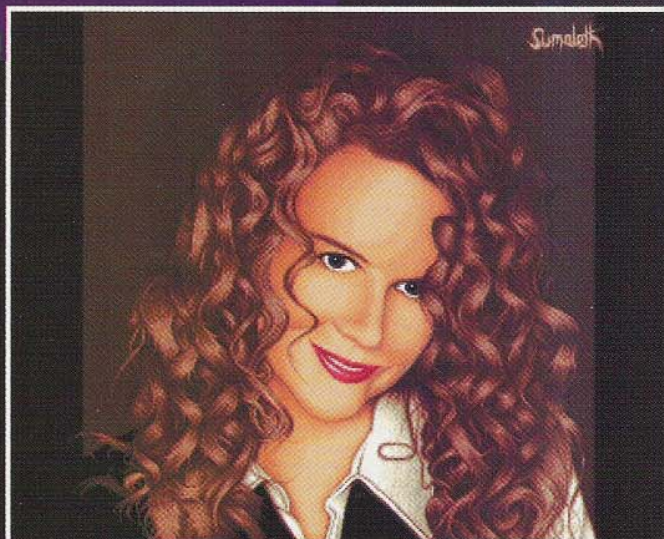
'only Amiga does it right'

Rowan Crawford (c) 1995
ginseng@yoyo.cc.monash.edu.au

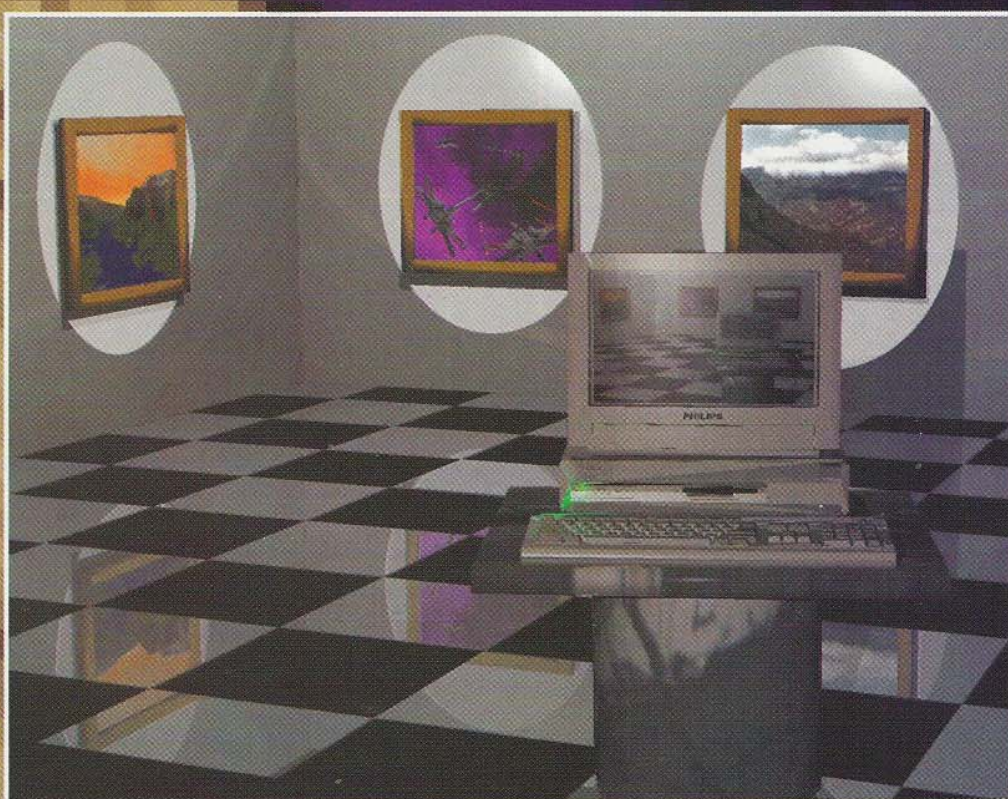
752 x 576, 24bit, Created with LightWave 3.5.
By Rowan Crawford.



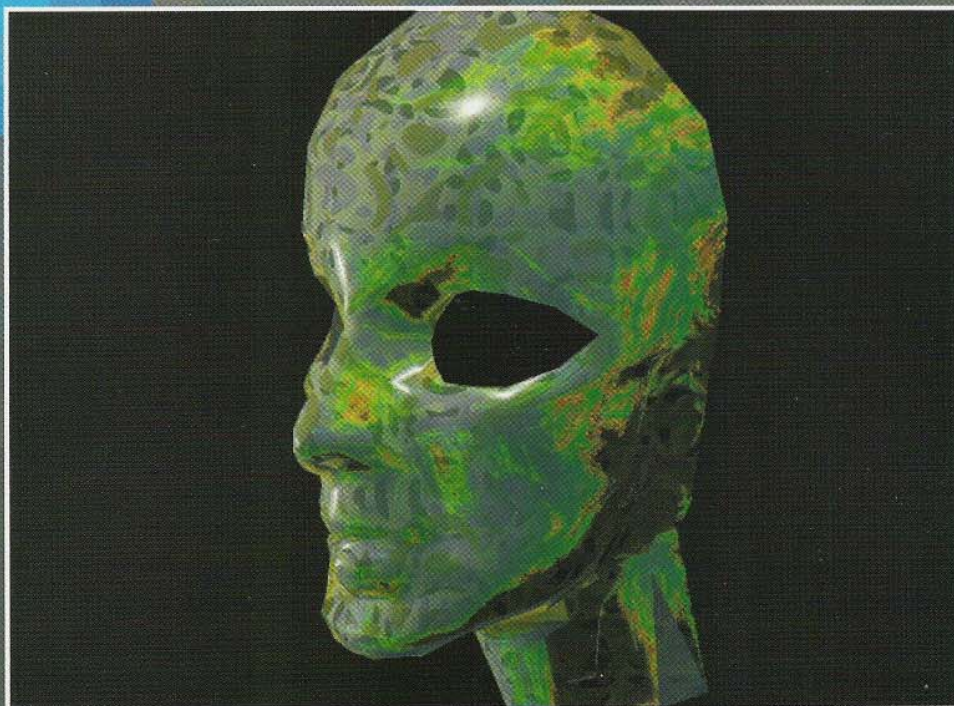
800 x 600, 24bit, Created with Imagine 2.
By Perry Wong.



320 x 256, 32 Colours, Hand Drawn.
By Rowan Crawford.



800 x 600, 24bit, Created with Imagine 2.
By Perry Wong.



640 x 512, 24bit, Created with Imagine 2.
By Jonathan Pearce.



640 x 480, 24bit, Created with Imagine2.
By Jonathan Pearce.



800 x 600, 24bit, Created with Imagine 2.
By Perry Wong.



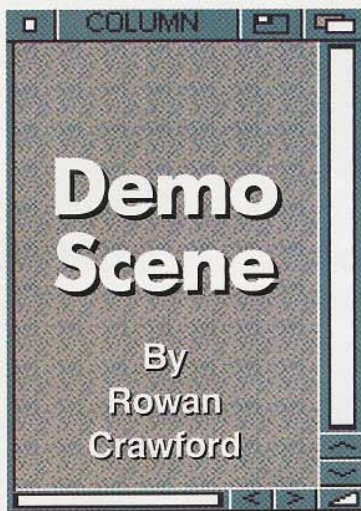
1280 x 512, 24bit, Created with Real3D.
By Peter Kelliher.



768 x 566, 24bit, Created with Imagine 3.1.
By Travis Falkenberg.



736 x 576, 24bit, Created with Imagine.
By Travis Falkenberg.



■ "The Party" is a yearly gathering of demo writers who want to meet others with a similar interest, and to compete in the numerous competitions. The party, which is held in Denmark, usually attracts between 3000 and 4000 people from all parts of the world and hosts around twenty big-prize competitions focusing on the Amiga, the Commodore 64, and the PC. The Party 94 was held between the 27th and 30th of December, and for the Amiga alone there were well over 30Mb of demo related releases. That includes demos, intros, graphics and music, along with miscellaneous other items such as animations.

This recent Party has brought forth possibly the best selection of Amiga demos ever seen. Whereas usually only the top three or four demos are worth viewing, this year even demos down as far as sixteenth position are worthy productions.

NEXUS 7

by *Andromeda (AGA)*

Starting with the winning demo (with 1443 votes), we have here arguably the best demo ever produced. Anyone who has seen "Arte" by Sanity will instantly recognise the style, but because Nexus7 is aimed at a higher base machine, the results are far more stunning. Every routine throughout this lengthy demo is new and refreshing, as well as being quite stunning to watch.

Special note should be made of the "natural movement" routine, which sees a desk lamp jumping around in a most realistic fashion. The music throughout is average at best, and graphics are limited.

PSYCHEDELIC

by *Virtual Dreams (AGA)*

This, the second placed demo with 710 votes, typifies the Virtual Dreams approach to making demos. Emphasis is placed on producing original and visually spectacular effects, with design coming second. Colour is the mainstay here - hence the title, along with a lengthy raytraced animation and some superb artwork by RA/Sanity (arguably the best artist on the Amiga).

MOTION

by *Bomb (AGA)*

Bomb is the newest group around, but its members are mostly from the highly successful people who wrote two previous party winners, Origin and Real.

They have stuck to their winning style, but this year they were up against much stiffer competition, thus only managing third place with 501 votes. The early routines are similar to those seen in Psychedelic, except they lose impact due to the large pixel sizes. The big talking point of this demo, however, is the full-featured Doom routine at the end. No baddies are included (yet), but it has fully texture mapped floors, ceiling and walls, steps and the rest. Its only drawback is the huge size of the pixels, but the effect is still quite stunning (just squint a bit).

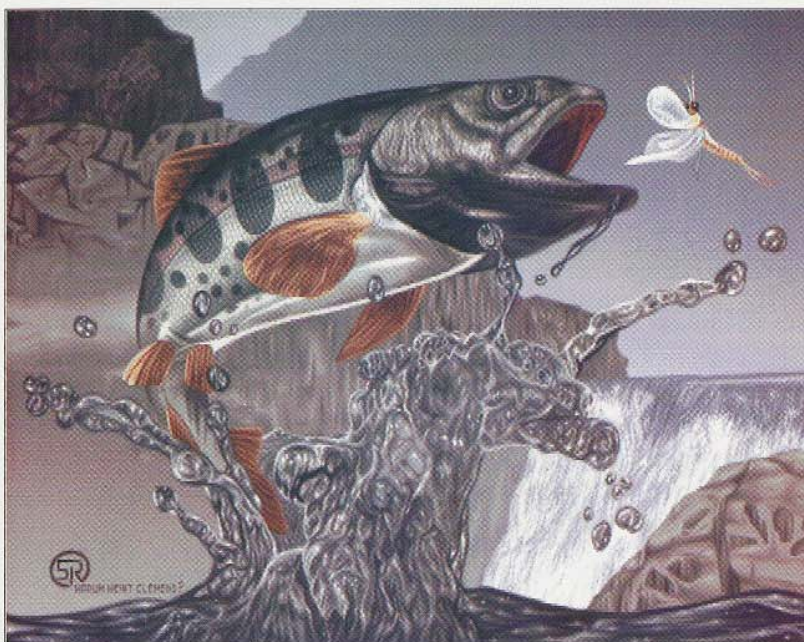
THE PREY

by *Polka Brothers (AGA)*

Skipping a couple of places down to 6th with 207 votes, this demo is the latest to have a shot at the "music video" genre, currently dominated by "State Of The Art" and "Nine Fingers". The music is excellent, and many of the effects are of an equally high standard. Short but sweet.



"Face of Nature" (preview) by Cougar



"Fish Food" by Fiver



"Helge Schneider" by Peachy

ROOTS

by Sanity (AGA)

Leaping down to 8th place, Sanity have surprisingly only managed to pick up 191 votes with their follow up to last year's ground breaking "Arte". The rea-

son is obvious, after viewing the demo - it's not finished (it says this in the scroller at the end). The coders' hard drive never turned up, and it contained most of the code and graphics, so the final assembly was done using odds and ends.

Even still, the routines present are up to Sanity's usual high standard, and the half finished result shows some real promise. Included is a rather neat (but very chunky) ray-traced anim ending with a train coming into a station (supposedly produced for a game intro), some decent artwork by Cougar, and a dance-type orientated soundtrack by Jester. Not as good as Arte, but worthwhile nonetheless.

IN A WORLD OF ASCII

by Impact

13th place was snapped up by this highly original offering from Impact (120 votes). The entire demo is played in a WorkBench window (complete with pointer), with all effects created by ASCII and ANSI characters. Impact have managed to immitate almost all of the cliché demo routines - dot tunnels, a Vista landscape anim, a zooming fractal, even a ball routine. Fascinating, and I'm surprised it didn't get a higher place.

What is apparent is that AGA has finally replaced OCS/ECS as the standard demo format. ECS machines hung on valiantly for over two years, but their time has come and gone. Not only does AGA allow more colours, it also allows coders to aim at a base machine which uses a 68020 processor, and it's probably this aspect which has allowed the big leap forward in demo technology.

We are sure to see even more AGA demos in the future, and this can only be a good thing as far as demo quality goes.

Further demos will be covered next month, since there were so many. I've downloaded nearly 16Mb of demos so far, and that's not even a third of the total releases! Commodore is dead, but the Amiga lives.

□

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Australian Amiga Review changed publishers as of the July '94 edition, but our editorial team has remained much the same. The magazine is now 100% produced using the Amiga, and it is 16 pages bigger.

We've been working on ensuring subscribers receive their copies of the magazine before it goes on sale at newsagents. Unfortunately, we've faced two problems in achieving this. Firstly, Amiga Review didn't change hands

until late June, so the July edition was not printed until late July.

We've caught up by doing this combined November/December issue, so that problem's been overcome. We've also had some problems with our shipping arrangements. These have now changed and we hope the problem has been fixed. For more information call (02) 879 7455.

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Now that Amiga Review is bigger, we're looking for writers. Even if you've written for other Amiga magazines, we promise to give you a chance!

Plain English explanations, in an entertaining style, offering intelligent information on getting more out of the Amiga are preferred. Any wordprocessor format is acceptable, although straight ASCII is preferred. IFF images should include captions in a separate text file (or on the end of the main text file). You can

forward your contributions on disk or modem them to us by calling (02) 879 7455 first and then, once okayed, ringing back on our modem line on (02) 879 4236. Alternately, send them to The Editor, Amiga Review, PO Box 288, Gladesville 2111.

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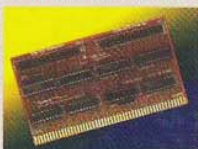
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